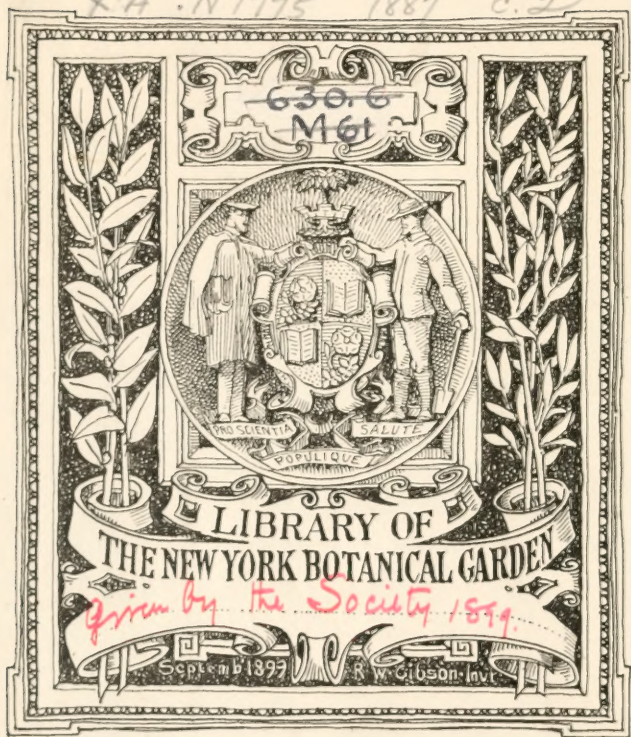


X.A. N7775 1887 C.21





SEVENTEENTH ANNUAL REPORT

OF THE

SECRETARY

OF THE

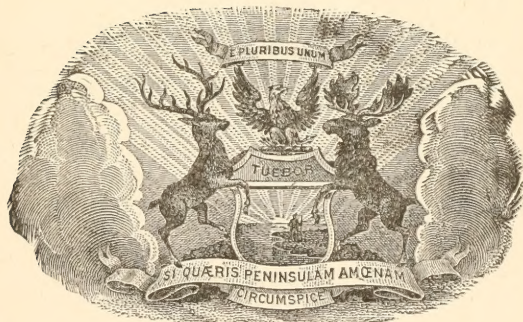
STATE HORTICULTURAL SOCIETY

OF

MICHIGAN.

1887.

LIBRARY
NEW YORK
BOTANICAL
GARDEN



BY AUTHORITY.

LANSING:
THORP & GODFREY, STATE PRINTERS AND BINDERS.
1887.

TABLE OF CONTENTS.

LIBRARY
NEW YORK
BOTANICAL
GARDEN

	PAGE.
Officers of the State Horticultural Society.....	vii
Branches of the State Horticultural Society.....	ix
History of Michigan Horticulture.....	3
Proceedings of the Winter Meeting.....	413
The Annual Fair of 1887.....	465
Proceedings of the Annual Meeting.....	474
Reports of Auxiliary Societies.....	525
List of Annual Members.....	555
List of Life Members.....	563
Index.....	567

OFFICERS
OF THE
STATE HORTICULTURAL SOCIETY FOR 1888.

PRESIDENT—T. T. LYON, South Haven.
VICE-PRESIDENT—L. H. BAILEY, Jr., Agricultural College.
SECRETARY—CHAS. W. GARFIELD, Grand Rapids.
TREASURER—S. M. PEARSALL, Grand Rapids.
LIBRARIAN—THOMAS H. FORSTER, Lansing.

EXECUTIVE BOARD.

ALFRED G. GULLEY, South Haven, 1	W. K. GIBSON, Jackson, 2 years.
year.	H. W. DAVIS, Lapeer, 2 years.
L. H. BAILEY, Jr., Agricultural College,	E. H. SCOTT, Ann Arbor, 3 years.
1 year.	EDWY. C. REID, Allegan, 3 years.

STANDING COMMITTEES.

ON FRUIT CATALOGUE—T. T. LYON, South Haven, Chairman; GEORGE C. McCLATCHIE, Ludington, for Northern Lake Shore; W. A. BROWN, Benton Harbor, for Southern Lake Shore; EVART H. SCOTT, Ann Arbor, for Central Michigan; H. W. DAVIS, Lapeer, for Eastern Michigan; D. G. EDMISTON, Adrian, for Southern Michigan.

ON NEW FRUITS—T. T. LYON, Chairman; G. H. LAFLEUR, Mill Grove; GEO. C. McCLATCHIE, Ludington; C. ENGLE, Paw Paw.

ON FINANCE—E. H. SCOTT, A. G. GULLEY, H. W. DAVIS.

ON ENTOMOLOGY—ALBERT J. COOK, Chairman.

ON VEGETABLE PHYSIOLOGY—L. H. BAILEY, JR., Chairman.

ON LANDSCAPE GARDENING—JAMES SATTERLEE, Chairman.

ON VEGETABLE GARDEN—W. W. TRACY, Chairman.

BRANCHES OF THE STATE HORTICULTURAL SOCIETY.

Name of Society.	Secretary.	Address.
Allegan County Pomological Society.....	G. H. LaFleur.....	Millgrove.
Grand River Valley Horticultural Society.....	W. N. Cook.....	Grand Rapids.
Saugatuck and Ganges Pomological Society.....	J. S. Owen.....	Douglas.
Lawton Pomological Society.....	Chas. D. Lawton.....	Lawton.
Berrien County Horticultural Society.....	A. J. Knisely.....	Benton Harbor.
Oceana County Pomological Society.....	T. S. Braman.....	Shelby.
Benzie County Horticultural Society.....	J. W. Van Deman.....	Benzonia.
Lapeer County Horticultural Society.....	H. W. Davis.....	Lapeer.
Lenawee County Horticultural Society.....	D. G. Edmiston.....	Adrian.
Eaton County Horticultural Society.....	S. R. Fuller.....	Eaton Rapids.
Holland Colony Pomological Society.....	I. Marsilje.....	Holland City..
Ingham County Horticultural Society.....	James Satterlee.....	Lansing.
Mason County Horticultural Society.....	L. W. Rose.....	Ludington.
Muskegon County Horticultural Society.....	C. L. Whitney.....	Muskegon.
Washtenaw County Pomological Society.....	Jacob Ganzhorn.....	Ann Arbor.
Genesee County Horticultural Society.....	Ed. H. Rockwood.....	Flint.
Lenawee and Hillsdale Horticultural Society.....	Mrs. Mary N. Allen.....	Quaker.
Spring Lake Horticultural Society.....	F. W. Babcock.....	Spring Lake.
South Haven and Casco Pomological Society.....	W. H. Payne.....	South Haven.
Ionia County Horticultural Society.....	J. H. Kidd.....	Ionia.
Manistee County Horticultural Society.....	J. V. P. Mukautz.....	Manistee.
Oakland County Horticultural Society.....	James S. Bradford.....	Pontiac.
Grand Haven Horticultural Society.....	C. E. Russell.....	Grand Haven.
Wayne County Horticultural Society.....	J. F. Root.....	Plymouth.
Wayland Horticultural Society.....	C. E. Davison.....	Wayland.
Osceola County Horticultural Society.....	W. L. Stoddard.....	Evart.
Wexford County Horticultural Society.....	Elmer Lewis.....	Cadillac.
Hillsdale County Horticultural Society.....	L. B. Agard.....	Litchfield.
Lake County Horticultural Society.....	Ernest Nicholson.....	Luther.

PRELIMINARY STATEMENT.

In the compilation and preparation of these pages the writer has drawn more or less largely, for geology, topography, and climatology, upon the writings of Prof. A. Winchell.

For early history under French and British rule, upon those of C. I. Walker and several others.

For modern history, upon the transactions of the Michigan State Pomological and Horticultural Society; those of the State Board of Agriculture; Pioneer Collections; The History of Fruit Culture in Berrien county and Dr. M. L. Leach's History of the Grand Traverse region.

Free use has also been made of the horticultural statistics to be found in the State census for the year 1884.

He is also indebted to the following persons for numerous items of valuable information :—

Name.	Address.	State.
J. M. Sterling.....	Monroe.....	Michigan.
J. C. Sterling.....	".....	"
I. E. Ilgenfritz.....	".....	"
E. H. Reynolds.....	".....	"
Dr. Woodland Owen.....	Adrian.....	"
B. W. Steere.....	".....	"
Humboldt Pennington.....	Macon.....	"
S. B. Mann.....	Lenawee Junction.....	"
J. B. Pennington.....	".....	"
D. G. Edmi-ton.....	Adrian.....	"
Prof. J. B. Steere.....	Ann Arbor.....	"
Prof. W. J. Beal.....	Agricultural College.....	"
Mrs. Mary N. Allen.....	Quaker.....	"
M. J. Hoag.....	Rochester.....	Minnesota.
George D. Kies.....	Clinton.....	Michigan.
W. F. Morous.....	Somerset.....	"
F. M. Holloway.....	Hillsdale.....	"
C. R. Coryell.....	Jonesville.....	"
Bates Fisher.....	Quincy.....	"
Lucas Joseph.....	".....	"
L. M. Leet.....	Bronson.....	"
J. A. Hartzler.....	Mottville.....	"
B. Hathway.....	Little Prairie Ronde.....	"
B. G. Buell.....	".....	"

Name.	Address.	State.
Alfred T. Blackett	Roseville	Michigan.
John Cutting	Niles	"
B. M. Hance	"	"
Wm. A. Brown	Benton Harbor	"
A. J. Knisely	"	"
John Whittlesey	St. Joseph	"
J. C. Holmes	Detroit	"
N. T. Bradner	Sand Hill	"
John Campbell (See Board of Public Works).	Detroit	"
John Stirling (See Belle Isle Park Com.)	"	"
L. Davis	Ann Arbor	"
Horace Carpenter	"	"
J. D. Baldwin	"	"
L. D. Watkins	Manchester	"
Z. M. Barber	Leoni	"
Robert Church	Marengo	"
Chas. T. Gorham	Marshall	"
George Taylor	Kalamazoo	"
Frank Curtis	Fowlerville	"
Wm. A. Dryer	Lansing	"
Mrs. D. L. Case	"	"
Wm. Appleton (City Engineer)	"	"
S. R. Fuller	Eaton Rapids	"
E. W. Barber	Jackson	"
M. H. Bailey	Winsor	"
C. E. Davison	Wayland	"
G. H. La Fleur	Mill Grove	"
Harrison Hutchins	Fennville	"
Mrs. C. S. King	Thornton	"
H. W. Davis	Lapeer	"
Horace Bradley	Ovid	"
Samuel Markey	St. Johns	"
A. J. Webber	Ionia	"
A. A. Crozier	Washington	D. C.
A. W. Slayton	Whitehall	Michigan.
S. S. Bailey	Grand Rapids	"
Wm. I. Blakely	"	"
A. T. Page	"	"
Walter Phillips	Grand Haven	"
Frank Hall	Spring Lake	"
Thomas Wilde	Coopersville	"
C. A. Dutton	Holland	"
H. C. Hills	Unionville	"
E. F. Guild	East Saginaw	"
D. H. Jerome	Saginaw	"
E. Hunt	Sheridan	"
James Satterlee	Lansing	"
H. H. Holt	Muskegon	"
John E. Bradley	Au Gres	"
Gladwin County Record	Gladwin	"
W. L. Stoddard	Evart	"
George E. Newell	Ashton	"
A. Ozmun	Baldwin	"
Edwin Russell	Manistee	"
S. W. Fowler	"	"
C. P. Reynolds	Harrisville	"
James Greenen	Kalkaska	"
J. M. Pratt	Old Mission	"
E. P. Ladd	"	"
E. O. Ladd	"	"
A. M. Smith	Traverse City	"
Mrs. J. F. Grant	"	"

Name.	Address.	State.
Grand Traverse Herald.....	Traverse City.....	Michigan.
Thomas T. Bates.....	".....	"
J. W. Van Deman.....	Benzonia.....	"
W. S. Hubbell.....	".....	"
W. C. Cain.....	Hillman.....	"
A. W. Rush.....	Vanderbilt.....	"
W. W. Johnson.....	Snowflake.....	"
Job Rohr.....	Cross Village.....	"
R. Kitchen.....	South Manitou.....	"
S. R. Boardman (North Manitou).....	Leland.....	"
Abel Hall.....	L'Anse.....	"

PLAN OF THE WORK.

An epitome is first given of the geological and climatic peculiarities of the State, with the more notable particulars of its discovery and occupation for missionary, military and fur-trading purposes; following which occurs a general history of its horticulture since the survey of its lands and their sale and settlement.

The sixty-eight counties of the Lower Peninsula are then separately considered, and a local history of each given, with some account of its organization and original settlement, commencing at the southeast, taking those of the south tier in consecutive order, and the second and each consecutive tier in the same order, commencing at the east county in each tier, only reserving the islands in Lake Michigan, constituting Manitou county, till the last.

Then follows a general consideration of the history and peculiarities of the Upper Peninsula, after which the local history of each of its fifteen counties is given, commencing at the east and taking each in the order of its occurrence when approached from that direction, excepting only Isle Royale county, in Lake Superior, which is given last.

So little is known and accessible respecting the horticultural capacities of this peninsula that its agricultural development is freely considered, since, in a good degree, this may be taken as the measure of its horticultural possibilities.

Great care has been taken to insure the correct statement of facts, but the circumstances have sometimes been such that absolute certainty has been found impossible, with the limited time and the imperfect material available for the purpose.

INTRODUCTORY NOTE

AND

HISTORICAL GEOLOGY

OF

MICHIGAN.

INTRODUCTORY NOTE.

By SECRETARY GARFIELD.

During the year 1886, in which the State of Michigan celebrated her semi-centennial, there was brought together a large amount of information of great historical value, that has been compiled in a volume issued by the State. The article devoted to horticulture, owing to the limited time for preparation, and the small space allotted to it, was but the merest epitome of our half century's progress in this art. It was this fact, coupled with the earnest desire to preserve a more complete account of the early undertakings in orchard planting, that led the Michigan State Horticultural Society to inquire into the best method of securing this historical material and placing it in convenient form for future reference.

By unanimous vote of the Executive Board of the Society, Mr. T. T. Lyon, the President of the Society, was invited to contribute a paper for our sixteenth volume of proceedings, embodying the prominent features connected with the rapid development of the horticultural interests of Michigan in the half century just closed. No man in the State had been so thoroughly identified with the progress in fruit culture, and no one had done so much to place Michigan in the front rank in the production of the best fruits as President Lyon. He undertook the work, and the following pages testify to the painstaking labor and indefatigable research brought to bear upon the history. It was found impossible to give completeness to the enterprise if the preparation was hastened so as to make the compilation a contribution to the volume for 1886, so that the work was continued into this year and is made the leading feature of our seventeenth volume of proceedings.

The Michigan State Horticultural Society, as well as all fruit growers who have a pride in the position our State occupies in the production of fine fruits, owe Mr. Lyon a debt of gratitude for this crowning work of a half century, which he has given to progressive horticulture. In this contribution it is

but fair to say that he has not given his own work the prominence it deserves in the steps of advancement made, or in the measures instituted to bring out the capabilities of the State and keep them before the public. To him, more than any other man, is due the standing which the Michigan Horticultural Society has secured among other organizations of its kind, and the consequent influence upon the material interests of agriculture by widening the area of production and intensifying the methods that have called business enterprise of the highest character to be employed in this realm of production.

From my own experience in securing items of history for the contributions I have made to our horticultural literature, and the difficulties I have often encountered in hunting out a single fact, I know this compilation will be of inestimable value to students of horticulture, as its facts are unquestioned, and they thread into every section of the State and touch every branch of the industry.

The free and proper employment of the material in these pages to further the advancement of an occupation that already takes rank as a leading one in our State, will be the most satisfactory compensation to the Society and the highest tribute to the compiler.

Grand Rapids, June, 1887.

MICHIGAN.

HISTORICAL GEOLOGY OF MICHIGAN,

AS INDICATING THE ORIGINAL SOURCES AND PRESENT CONSTITUTION
OF ITS SOILS.

The actual causes of the present condition of the earth's surface lie hidden among the events of ages long antedating the pages of history and the existence of man.

The deductions of the geologist, therefore, necessarily take the form of theories, usually based upon the assumption that the earth's mass was once in an incandescent and fluid state; and that, by the process of general cooling, and the subsequent disposition and influence of moisture and frost, acting through lengthened periods, it has gradually reached its present condition.

These theories also proceed upon the assumption that, as soon as the surface became habitable, it was occupied by plants and animals adapted to existing conditions; which, from time to time, as conditions changed, gave place to new types of existence, leaving behind them, however, the evidence of such existence in the coal beds and in the petrifications occurring in the rocks of those periods.

A careful and extended study of these affords the means of determining the relative ages of the strata in which they occur; while the relative ages of the strata of aqueous origin are further indicated or inferred from the natural order of their deposition from water.

The varying theories devised by prominent geologists to account for existing facts have long since passed the ordeal of discussion and collation, and have become digested into something akin to a formula; which has come to be generally accepted. Such formula supplies the basis upon which to construct what is designated as the historical geology of a region.

We quote from Prof. A. Winchell, formerly the State geologist of Michigan, the historical geology of this State, as follows:

The first land within the limits of the State was that which we have mapped as Laurentian and Huronian—a small portion of the Upper Peninsula, lying northwest of Green Bay. No part of the existing continent is older, while nearly all other portions were still sea-bottom, except an angulated belt north of the great lakes and the river St. Lawrence. This original area has been subjected to a vast amount of subsequent invasion, and correspondingly diminished in its elevation and contracted in its dimensions. Its upheaval marked the close of Eozoic, and the dawn of Palaeozoic time.

At the end of the first period of Palaeozoic Time, an igneous outburst called into existence Keweenaw Point, the Porcupine Mountains, and the intervening copper ranges, together with Isle Royal and limited areas upon the immediate shore of Lake Superior.

After this time there were no local disturbances of special importance. The whole continental mass east of the Rocky Mountain region was, by degrees, bodily uplifted. The Michigan region slowly emerged. The valley which was to become the basin of Lake Superior was at first a bay of salt water. With the progress of continental upheaval, it became isolated from the sea, and was for ages a salt lake. The sea still set up the valley of the St. Lawrence to the head of the present hydrographical basin of Lake Ontario.

At the end of the Silurian Age the whole Upper Peninsula had emerged, but the Lower Peninsula was still sea bottom. On the west the continent reached down to Chicago, and, on the opposite side, its shore trended southeast to London and the Niagara river. At the close of Devonian Time, the Lower Peninsula marked the position of a vast bay opening southward. It is not certain whether the anticlinals on the south of the Peninsula had an existence at this early period or not. It is more probable that the coal making marshes of Michigan were continuous with those of Ohio, Indiana and Illinois, but this is far from certain.

At the end of the Carboniferous Age all Michigan was dry land. But none of the great lakes existed except Superior. The region which is now the centre of the Lower Peninsula was probably less elevated than the regions which now lie upon the borders and in the beds of Lakes Huron and Michigan. The surface denudations going forward through Mesozoic and Caenozoic Time isolated the coal regions of Michigan and Ohio, if they were ever connected, depressed the regions which were to become the basins of Lakes Michigan, Huron and Erie, and excavated the first Niagara gorge. The drainage of the great northern sea changed it to a lake of fresh water, in which rose the St. Lawrence, flowing into the Atlantic, and probably another great stream flowing through the hydrographical basin now occupied by Lake Michigan and the Illinois river to the Mississippi and the Gulf of Mexico. No traces of the Flora and Fauna of Michigan, during this long period, have been preserved; but without doubt, forms of animal and vegetable life adapted to the physical situation were abundant.

At length the region which was to become Michigan was buried, in common with the entire northern part of the continent, beneath a burden of accumulated snow and ice. This, like modern glaciers, underwent a slow motion which imparted a grinding action to the sheets of ice, and materially modified the surface features of the underlying country. The direction of

this movement, on the eastern side of the State, seemed to have been from the northeast; on the western side, it may have been more from the north. The erosion of the continental glacier gave origin to the boulders and finer materials which occupy the present surface, and its movement transported them southward. By such action were deepened, if not originated, the valleys of Lake Erie, Lake Huron, Saginaw Bay, and Lake Michigan, with its appended bays. This action, combined with the strike of the underlying strata, has determined those trends in the physiographic features of the State, which we have designated as the "Diagonal System."

In due time a change of climate, dissolving the glacier, originated torrents of water, which imparted an imperfect stratification to the superficial portion of the drift materials. There was, perhaps, a subsidence, which buried the whole State again beneath the waters of the ocean. Whether this were so or not, the great valleys excavated by Mesozoic and glacier agencies, were left filled with the water which either was, originally, or in time became fresh water. The breadth of the great lakes exceeded vastly their present dimensions. Lakes Erie, St. Clair, and Huron were one. Through Saginaw Bay and the valley of the Grand River, Lake Huron connected with Lake Michigan. The latter spread over the prairie region of Illinois. By the removal of the eastern barriers, the lakes were slowly drained to their present dimensions.

The surface of the Lower Peninsula was, at first, dotted with almost numberless small lakes. Many of these, by filling with sediments, marl and peat, became converted into marshes or even meadows and arable lands; and the remainder of them are undergoing the same process.

It is likely that in America, as in Europe, man made his appearance while the dissolution of the glacier was in progress. We have, at least, some evidence of his presence in Illinois, while the prairies were a lake bottom.

Whatever may be the conclusion as to the correctness or propriety of the assumptions embodied in the foregoing extract, they surely possess the merit of accounting very perfectly for the constitution, as well as for the present condition of Michigan soils, as compared with those of the regions further west and south.

While the mineral constituents so bountifully supplied to the soils of the Peninsular State by the disintegration of its rocks, have, under the favoring influences of surrounding waters and tempered breezes, built up its soils from the debris of the growth and decay of dense forests, preparing them by both original constitution and subsequent addition and amelioration, to more fully meet the varied needs of modern agriculture and horticulture. On the other hand, the naturally even richer soils of the adjacent regions, lacking these favoring lacustrine influences, and subjected, through uncounted ages, to the influence of constant decay, and to annual visitations of prairie fires, have been kept open to the free sweep of winds, with a consequently rapid evaporation of moisture, accompanied by more severe extremes of heat and cold, circumstances which seem naturally and fully to account for the propagation eastward of the dryer climates, and the treeless condition of the great western plateau.

The highest lands in the southern portion of the Lower Peninsula occur in the town of Somerset, in Hillsdale county, where the elevation above the level of the surrounding lakes reaches six hundred and thirteen feet. North of this, and extending from the Saginaw and Bad rivers across to those of

the Maple and Grand rivers, a nearly continuous valley occurs, the highest elevation therein being only seventy-two feet above lake Michigan.

On the other hand, the elevations of the northern portion of the Lower Peninsula are believed to reach nearly or quite eight hundred feet in Ogemaw county, and probably twelve hundred feet in Otsego. The heights are not those of the hilltops, but rather those of plateaus.

There are sand dunes along the east shore of Lake Michigan, at New Buffalo, from thirty to ninety-three feet in height; at Grand Haven, from one hundred to two hundred feet. Limestone forming the northern angle of Leelanaw county, rises somewhat precipitously to a height of two hundred or three hundred feet.

Steep or precipitous bluffs occur in Oceana, Mason, Manistee, Benzie, Leelanaw, Antrim, Charlevoix, Emmet, Presque Isle, and the northeast part of Huron counties.

Probably owing to the configuration of the bottom, there is, especially at the north, a tendency to the formation of lagoons or small lakes, along the eastern shore of Lake Michigan, by the forming of a new beach in advance of a former one. Pine Lake, in Charlevoix county; Carp and Glen, in Leelanaw; Crystal, in Benzie; Portage, in Manistee; and Big Sable, in Mason; are perhaps results of such processes.

An impression has existed quite generally that nearly the entire eastern shore of Lake Michigan consists of drifting sand. In 1874, Henry Clubb, at that time a resident of Grand Haven, after an exploration of about two hundred miles of this coast, and making careful inquiries respecting the remainder, states that, "In a distance of two hundred and forty miles, from the southern line of the State to the northern extremity of Leelanaw county, sand hills extend only about seventy-six miles, leaving about one hundred and sixty-four miles where good arable land presents to the lake a bluff, varying in height from forty to two hundred feet, which, of itself, is a sufficient protection against sand storms, even if denuded of forests; that, of this seventy-six miles of sand-hills, at least sixty miles are well-covered with forests, and show no tendency to drift inland; that of the sixteen miles of wide beach, where the lake is receding, at least fourteen miles are fenced off from the good land by undisturbed forest; and that the two miles of movable sand, where the protection either never existed or has been cut away, are spread among the various points along the shore, such as Muskegon, Grand Haven, Pigeon Creek, and the mouths of Holland and Kalamazoo harbors; that even at Grand Haven, where the greatest damage has been done, the river prevents it from encroaching farther inland, while the natural growth of young pines is greatly limiting the area of drifting sand."

The assertions that these mountains of sand "have already moved several miles inland," and that the sand hills extend the whole length of the shore, and are of an average width of six miles, are so at variance with facts, that it is surprising that anyone should venture the statement without first ascertaining its correctness.

CLIMATE.

ITS FAVORABLE CHARACTERISTICS, AS BEARING UPON FRUIT CULTURE.

The acknowledged superiority of Michigan as a fruit growing State is believed to be very largely due to the favorable character of its climate. It is a well known fact that large bodies of water, especially if at the same time they are very deep, yield but slowly to the varying temperatures of the seasons, holding in store in their depths a portion of the excessive warmth of summer until wrung from them by the angry, biting blasts of winter; and, by a reverse process, to some extent carrying a portion of the chill of winter over into the spring.

In southern Michigan the prevailing winds are southwesterly, reaching its shores after having been subjected to the equalizing influences already mentioned, in passing over nearly one hundred miles of the open waters of Lake Michigan, thus affording a partial exemption from the extremes of temperature which often operate so disastrously upon the cultural, and especially upon the pomological interests of the more western States.

In speaking of this subject in connection with his climatological charts of the State, Prof. A. Winchell, formerly State geologist, remarks:—

“The sinuosities of the several (isothermal) lines will demonstrate at a glance the peculiar character of the climate of Michigan, and the fact that, both in summer and winter, it is better adapted to the interests of agriculture and horticulture, and probably also to the comfort and health of its citizens, than the climate of any other northwestern State. The marked peculiarity of the climate of Michigan, in these respects, is attributable to the influence of the great lakes, by which the State is nearly surrounded. It has long been known that considerable bodies of water exert a local influence in modifying climates, and especially in averting frosts, but it has never been suspected that Lake Michigan, for instance, impresses upon the climatic character of a wood region an influence that is truly comparable with that exerted by the great oceans.”

An examination of the *isotherms of average summer temperature* will develop the fact that the line indicating a temperature of 60 degrees, which crosses Lake Michigan in the latitude of Chicago (about 42 degrees), and which, only seven degrees of longitude farther west, is found in the valley of the Red River of the North, at latitude 48 to 50 degrees, at the east of the lake trends northward to latitude $44\frac{1}{2}$ degrees, or a little south of Traverse.

City; while, passing eastward, it is carried so far to the south by the combined influences of Lakes Huron and Erie, that it crosses the eastern boundary of Michigan very nearly in the latitude of Detroit. Again the summer isotherm of 65 degrees, which, westerly of the lakes, occurs at Duluth, in latitude 47 degrees, is also that of Traverse City, on the east of Lake Michigan, in latitude 45 degrees; while it crosses the lake in the latitude of Milwaukee (43 degrees).

If now we turn our attention to the lines of *equal winter temperature*, we will discover a wonderfully contrasted position of the indicating lines. The winter isotherm of 24 degrees will be found slightly south of Omaha, in latitude 40 degrees, or a little above, and passes just westward of Chicago (latitude 42 degrees), thence it passes almost directly north, reaching the easterly shore of the lake but a few miles southward of Traverse City, in latitude 44½ degrees, trending southward, in the central part of the State, below the parallel of 43 degrees; thence again northward, crossing Lake Huron in the latitude of Alpena (45 degrees), while the isotherm of 23 degrees, passing only a few miles north of Omaha, is found easterly and southerly of Milwaukee, and makes the Traverse region considerably northward of Traverse City, passing just eastward of Saginaw and Bay City, and crossing Lake Huron in latitude 45 degrees. On the other hand, the winter isotherm of 26 degrees, which occurs south of Omaha, in latitude 40 degrees, or thereabouts, strikes the lake shore nearly a degree of longitude eastward of Chicago, and makes the eastern shore and at the same time its limit northward at or near Muskegon, opposite Milwaukee, whose isotherm, as before stated, is 23 degrees. From this point the line of 26 degrees trends southward to near the north line of Indiana and Ohio, and thence again northward near the east line of the State, crossing Lake Huron considerably above latitude 44 degrees.

From the data already given we deduce the conclusion that Michigan (and in a very special sense the more immediate vicinity of its bordering lakes), possesses a climate compounded of the average temperature of the summer of the Red River country of the North (latitude 48 degrees), and that of the winter of southern Illinois and Indiana. Its mantle of forest also may doubtless be largely attributed to the increments of moisture imparted to the winds in traversing the circumjacent waters, while the comparative exemption of the State from the occurrence of tornadoes and cyclones is doubtless due to the equalizing influence of these surroundings.

It is, to a great extent true, however, that the adaptation of a region to the cultivation of fruits is quite as dependent upon the *limit* of such temperature, especially downward, as upon the average of the season. With the more tender fruits, such as the apricot, nectarine, peach, and even the mazzard class of cherries, this is eminently true. If, now, we turn our attention to the isotherms representing this extreme minimum (the figures indicating the range of the thermometer below zero), we will discover that the line of 27 degrees, representing northern Missouri and southern Nebraska, represents also the minimum of the westerly and northerly shores of Lake Michigan and Green Bay, from Milwaukee to Mackinaw, while the entire eastern shore of the lake, from St. Joseph to beyond Little Traverse Bay (latitude 45½ degrees) is covered by the minimum of 16 degrees—the same time extending along the eastern shore of the State, via. Alpena, Tawas, Detroit, Monroe and Toledo, and thence northeasterly, leaving Ohio at the

south. The true import of the facts expressed by this line will be better appreciated when we consider that the minimum of 24 degrees, which includes the central portions of the State of Michigan, as far north as 45 degrees, expresses also the minimum at St. Louis, Missouri, in latitude a little north of 38 degrees.

These minima may, very probably, become subject to more or less variation, consequent upon the extensive removal of timber, in the clearing and improvement of farm lands throughout the interior of the State, affording freer scope to the winds from such direction, accompanied by greater and more sudden variations of temperature, with results similar to that of the winter of 1874-5, when the minimum, even in the fruit belt (as the region along the easterly shore of Lake Michigan is more commonly called), was two degrees lower than had previously occurred during the occupancy of the country. This seems to have resulted from the unusual circumstance that the paroxysm of cold occurred during the night, following the prevalence of a wind from the northeast, precluding all benefit from the ameliorating influence of the open waters of lake Michigan lying at the west. The result of this unusual depression of temperature seems to have been a very considerable amount of injury to the peach trees in the peach-growing regions, with a nearly total loss of the crop of fruit, except in specially favorable locations, in which partial crops, and in very rare cases even full crops seem to have escaped. It would seem to be a fact strongly indicative of the great potency, as well as the extent of this great lake influence, that one at least of these frost-proof orchards of the peach was located in the immediate vicinity of Grand Traverse Bay, within a little over twenty degrees of the arctic circle. With the exception of peaches, very little injury seems to have occurred in the fruit belt; although, away from the vicinity of the lakes, the loss of the crop of fruit of all kinds was very general.

That the result of this lake influence is more favorable upon the eastern shore of Lake Michigan than upon the western, must be attributed to the fact that the prevailing winds which bring frost or severe cold are westerly, reaching the easterly or Michigan shore only after having traversed nearly or quite one hundred miles of very deep, open water, to which, during the warm season, they will have surrendered a very considerable increment of heat, to be retained until it shall be wrestled for and re-absorbed by the colder gales of late autumn and winter, thus quenching their excess of cold by the transfer to them of a portion of the surplus heat of the warm season.

The western shore of Lake Huron has, up to the present time, been mainly given up to other pursuits than agriculture, hence little is practically known of its horticultural capacities. If, however, aside from the character of its soils, it shall be found less desirable for such purposes than the region along the western shore of the State, the chief cause of such difference will doubtless be found in the preponderance of westerly and northwesterly winds, which yield up much of the warmth absorbed in traversing Lakes Michigan or Superior, while sweeping over the ample breadth of the peninsula, before reaching the regions in question.

The obvious and well-known results of these transfers of warmth are a comparatively slow increase of temperature with the opening of spring, retarding growth and blooming till danger from spring frosts is mainly past, and also delaying the occurrence of frost in autumn, adding, at the end of the growing and ripening season, more than sufficient time to compensate for

retardation in spring. It may not be improper to add that a farther result of this condition of affairs, recognized by medical men, and also by even temporary residents in these regions is, that this comparative equability of climate is decidedly advantageous to persons in feeble health, and especially so during the warm season.

That the ameliorating influence of the surrounding lakes, and of Lake Michigan especially, should be potent enough to suffice for the growth, fructification, and safe hybernation of such semi-tropical trees as the apricot, nectarine and peach, in as high a latitude as that of Grand Traverse Bay, and possibly farther, may well be deemed surprising. Of the fact, however, there can be no doubt; and among the apparent reasons for such fact, we may notice that the waters of this bay are very deep, and that it seldom ever freezes, in winter, before the month of February, while the deepest waters of Lake Michigan, which are understood to be no great distance from the mouth of the bay, remain unfrozen during the entire winter.

It is also a fact well-known to nautical men, that a current sets northward along the easterly shore of Lake Michigan, doubtless occasioned by the increased influence of prevalent southwesterly winds, upon the waters nearest that shore; and also that there is a reverse current along the westerly shore, thus causing a slow but constant transfer of the warmer waters of the south toward the northerly extremity of the lake, and *vice versa*, much in the same manner as we see, on a far grander scale, the tepid waters of the Gulf of Mexico transmitted by the gulf stream, to soften the climate of north-western Europe.

The winds coming from the surrounding waters during winter yield their warmth gradually in traversing the land. This gradual *shading out* of such influence, in passing toward the interior, becomes more clearly manifest upon examination of the isothermals already spoken of. The average summer temperature of the interior of the Lower Peninsula is thus shown to be four degrees higher than that in the immediate vicinity of the lake, while, on the other hand, that of winter is five-degrees lower. The difference between the extreme minima of these two regions is still more striking, this being fully eight degrees lower in the interior. It is obvious, however, that the ameliorating influence of the lakes is decidedly potent, even in the interior of the peninsula, since the average summer temperature, even here, is fully four degrees lower than that of the Mississippi valley, in the same latitude, while the average temperature of winter is three degrees higher, and the extreme minimum four degrees higher.

Messrs. Wheeler and Smith, in Michigan Flora, remark: "Trees like *Liriodendron tulipifera*, *Asimina triloba*, *Cercis canadensis*, *Gleditsia triacanthos*, *Cornus florida*, *Nyssa multiflora*, and *Morus rubra*, which belong to Ohio and central Illinois, have crept northward, favored by the mild influence of the lake winds, through the central and western part of the Lower Peninsula, above beyond the middle, and the same is true of smaller and less noticeable plants."

In the more northerly portions of the State, especially of the Lower Peninsula, even the severities of winter are, in some respects, found to minister to the success of agricultural operations. In the regions referred to the snow usually covers the ground before the latter becomes frozen, acquiring a very considerable depth, such that the soil remains unfrozen throughout the winter, and even potatoes may be left ungathered with impunity, while

apples may remain upon the ground unfrozen, and the depth of snow is usually such that grapevines, and small fruit plants generally, are buried out of harm's way. In spring, vegetation, from the absence of frost in the soil, not unfrequently pushes through the snow before it entirely disappears, thus endeavoring to make amends, to some extent, for the shortness of the growing season, by treading upon the heels of winter.

The portion of the Lower Peninsula from Grand Traverse Bay northward, enjoys a very flattering prominence as a romantic and health-giving summer resort, a prominence very largely, if not even primarily, due to the same peculiarities that render it so desirable as a fruit-growing region, to which, doubtless, was largely due its early settlement by an energetic and thrifty population. The region embraces a large proportion of excellent lands for fruit-growing purposes, as well as a climate mellowed by the influence of the adjacent waters, in this respect comparing favorably with localities several hundred miles farther south.

The three or four more southern tiers of counties have been so long occupied by a mainly agricultural population, and the timber has generally been so mercilessly destroyed to open the lands for cropping purposes, that long stretches of country have, very generally, become exposed to the nearly unchecked influence of the winds, resulting in more or less perceptible, and clearly unfavorable changes of climate, so far as its influence upon agriculture, and especially fruit culture, is concerned, the result being that stronger winds, in more immediate contact with the soil, dissipate the surface moisture much more rapidly, and, with it, the warmth of the soil, increasing the liability to both drought and frost during the growing season, and, in winter, increasing the severity of the storms, and of the paroxysms of cold which, from time to time, sweep over the country. That much of this waste of timber has been thoughtlessly and unwisely done, and that it would be the dictate of the highest wisdom to at once apply the obvious remedy by replanting where needful, and by taking measures for the proper conservation of the requisite portions of such as yet remains, will, we imagine, hardly be questioned by thoughtful and observing persons, since the practice of the past strongly tends to remand the Peninsula State to the condition of her more western sisters, save only the then uncertain benefits of an insular position.

The facts and figures above employed are largely drawn from Prof. A. Winchell's climatological charts of Michigan, and the same are re-affirmed and amplified in a paper read by him before the State Horticultural Society during its annual meeting held at Ann Arbor on December 6th, 7th and 8th, 1880. See the Society's transactions for that year, pages 155 to 163 inclusive.

In the Grand Traverse region, killing frosts do not occur later in spring than at St. Joseph, and autumn frosts around Grand Traverse bay generally hold off till November. There is no section north of 40 degrees where they have a longer season than about Grand Traverse bay, in latitude 45 degrees.

In the storm of 1856, the temperature was the same at Old Mission, at Grand Haven, and at St. Joseph. In that of 1864, there was no difference between thermometers at Northport, Manitou Islands, Glen Arbor, Pentwater, White Lake, Muskegon and St. Joseph. They ranged from 10 degrees or 12 degrees to 14 degrees. These observations were taken on low lands. At a high point at St. Joseph the thermometer showed only 5 degrees.

In 1867, Sanford Howard says: "Accurate records which have been kept

for eight years at Traverse City, and nearly as long at Northport, show that the mean temperature of the winter months is several degrees higher than that of Ann Arbor, although the former are from about two and a half to three degrees farther north."

Among the Indians, as far north as Mackinac, may be found apple trees doing well. Some are thirty feet high. They doubtless attain that height because they grow in the midst of forests. Currants were planted on Snow Island during the war of 1812, which are still growing and producing fine fruit. Peach trees have, for the last nine years, generally borne full crops. Peach trees from twelve or thirteen years old (in 1869) are bearing full crops.

MICHIGAN.

A HISTORY OF ITS HORTICULTURE.

As preliminary to a history of horticulture in Michigan, it seems eminently proper, if not indeed essential, that the subject be opened by some account of the discovery and early settlement of the country.

The first authentic record of the visit of Europeans to what is now the State of Michigan is that of two Jesuit Fathers, Charles Raymbault and Isaac Jaques, who visited Sault Ste. Marie during the latter part of the year 1641, where they remained for some time, teaching the doctrines of Christianity to the Chippewa Indians, but leaving with the purpose to return and establish a permanent mission. The former fell a victim to disease, while the latter met a martyr's death at the hands of the Iroquois.

In the autumn of 1660, Rene Menard, also a Jesuit, coasted in a birch bark canoe along the south shore of Gitchi Gomee (Lake Superior), as far as the head of Keweenaw bay, where he spent the long, cold winter with no white man nearer than the vicinity of Montreal. Continuing his journey the ensuing summer, he became lost from his Indian guide, and was never heard of afterward.

Menard was followed the next year by another Jesuit, Claud Allouez, who is said to have established a mission on the south shore of Lake Superior, just without the present boundary of Michigan. He seems to have carefully explored and mapped the entire lake, spending several years in this region.

In 1668, Claud Dablon and (Pere) James Marquette established the first permanent mission within the present borders of Michigan, at Sault Ste. Marie. They seem to have remained here a considerable time, during which, in company with Allouez, they are supposed to have explored Lake Michigan, and are said to have visited the St. Joseph river, ascending it far enough to learn something of its course and size, and, about 1679, established a mission at the mouth of the river, and built a fort, which was occupied up to the time of the revolutionary war.

In the summer of 1679, La Salle and Hennepin built and launched the Griffin, the first European vessel above the falls of Niagara, armed her with five guns, and, during the succeeding autumn, made a voyage through the upper lakes and rivers, as far as a point opposite the island of Michilimackinac—the present Mackinaw—passing up the Detroit river during August of that year, and finding the Indian village of Teuchsagrondie, occupying the site of the present city of Detroit.

A military and trading post was at this time established on the mainland at the terminal point of this voyage, which subsequently became the centre of extensive and lucrative trade with the Indians. In 1686 Fort St. Joseph was established on the site of the recent Fort Gratiot by De Laht, which, however, was abandoned only two years later. Another fort was erected about this time and named Detroit, but its precise location is unknown. In the establishment of these forts at this time an important purpose seems to have been to check the encroachments of the Iroquois and their English friends, who sought access to the northwest by this route for the purpose of sharing the rich fur trade of the northern lake region.

In 1694 De La Motte Cadillac was placed in command of Mackinaw. He conceived the idea of founding a permanent post and settlement on Detroit river, and, by so doing, holding in check the incursions of the English and their allies, the Iroquois. With the approval of the French prime minister, Count Ponchartrain, he on the 24th day of July, 1701, landed at Detroit, accompanied by one hundred persons, soldiers, traders and settlers, and at once erected a stockade of pickets, about which there accumulated a couple of thousand Indians within the next three or four years.

This establishment underwent various mutations growing out of the jealousies and rivalry of persons in authority on the one hand, and the unstable character of Indian friendships on the other, so that for a long time very little progress was made in the agricultural occupation of the adjacent lands. About 1749 there occurred a very considerable immigration to Detroit from France, the settlers being encouraged by grants of land, and even by advances of stock, till, in 1761, the population of this immediate vicinity was supposed to be about 2,500, of whom 500 were capable of military duty.

The surrender of Quebec to General Wolfe in 1759 was soon followed by the transfer of the northwestern posts, including those in Michigan, to the English, a change which seems to have been accepted by the Indians with far less readiness than by the French settlers. Indeed, this Indian disaffection, which is believed to have been fomented by the Jesuits (who up to this period had been almost exclusively their religious teachers), may fairly be assumed to have been the most potent inspiration in bringing about the great Pontiac conspiracy, which in 1763 attempted the destruction of all the British posts from Niagara to Green Bay, and which failed only in the cases of Pittsburg, Niagara and Detroit, while, in Michigan, those at Mackinaw and St. Joseph were captured and the occupants massacred, while Detroit was subjected to a four months' siege.

From this period until 1774, Michigan remained under military rule. At this time it became part of the province of Quebec, and became, at least nominally, subject to civil government under Col. Henry Hamilton as Lieut. Governor, and Superintendent of Detroit. This condition of the country continued till the treaty of peace with Great Britain, at the close of the revolutionary war, during which Detroit was the center of British influence and for organizing Indian raids upon the frontiers of the struggling colonies.

By the treaty of peace, concluded in 1783, Michigan became a dependency of the United States, although complications arose which delayed its actual transfer until July, 1796, when it became part of the Northwestern Territory under the governorship of General Arthur St. Clair. Several subsequent changes arose out of the detachment of the territory of adjacent States, till in January, 1805, an act of Congress organized it (omitting the

Upper Peninsula), as a separate territory, of which General William Hull was made Governor, the governor and judges exercising legislative power.

On the 11th of June, 1805, five months after the passage of the act organizing the territory of Michigan, and previous to the arrival of the newly constituted "governor and judges," a fire originated at midday in the midst of the crowded town, and at night-fall the entire place had become a smoldering ruin, presenting a truly calamitous spectacle to these uninaugurated officials on their arrival. On July 2 the new government was organized and Michigan entered upon her career as a territory of the United States.

The destruction of Detroit had so far obliterated landmarks and boundaries that Congress was induced to provide for a replatting of the ground and the re-distribution of the same to former owners, under the auspices of the governor and judges.

General Hull retained the governorship, together with the command of the troops at this point, after the breaking out of the second war with Great Britain, till his disgraceful surrender of Detroit to General Brock on the 17th of August, 1812, when martial law was again declared, which state of affairs continued till after the victory of Commodore Perry, on Lake Erie, on the 10th of September of the following year, when, on the approach of the army of General Harrison, Detroit was again evacuated, and soon after permanent safety was assured by his victory at the Thames.

Col. Lewis Cass was appointed Governor on the 13th of October, 1813, and in 1818 portions of the public land were brought into market. This, with the introduction of steam navigation upon the lakes and the opening of the Erie canal, inaugurated an extensive emigration to the territory. Hence, from this era we may date the commencement of the more modern history of the region, together with the knowledge and development of its horticultural capacities.

In speaking of the first steamboat upon the upper lakes *Bela Hubbard* (in *Pioneer Collections*, Vol. 1, page 407), says: The *Walk-in-the-Water* in 1818, "came to Detroit, returned and started to come up again. Hard wind compelled her to anchor at Point Avenue, some twenty miles from Buffalo. She sprung a leak, attempted to reach that point, but made the beach instead. The crew were saved but the vessel went to pieces. She was too weakly built for the rough seas of the lakes, being after the pattern of the North River boats. Captain Harvey says the engine was a curious affair, and had as many cogwheels as a grist mill. The engine was saved and afterwards went into the Superior."

GENERAL HISTORY.

Occasionally an adventurer found his way into the southern part of the Lower Peninsula, immediately after the close of the last war with Great Britain, and the transfer of the government to the United States authorities; but not until after the extinguishment of the Indian title to a considerable portion of the lands in the three or four more southern tiers of counties, did immigration tend very decidedly in this direction.

The first feeble pulsations of this movement are preceptible as early as 1823, increasing slowly, and then more and more rapidly, till they culminated in the great speculative avalanche of 1836 and '7.

Aside from the locations of missionaries and Indian traders in the counties of Wayne, Macomb, St. Clair, Berrien, and Grand Traverse, settlements were commenced for agricultural purposes in all the counties in the first four tiers between 1823 and 1836.

Although, as will be seen from the histories of the several counties, settlers almost without exception made orchard planting the first business after the preparation of suitable ground, this was generally done mainly to secure a home supply of fruit, as there was as yet no market for orchard products beyond a merely local one, while the special adaptation of the soil and climate to horticultural pursuits was a problem yet unsolved. The wonderful growth of the more western States and cities was yet to occur, and their comparative unfitness for the growth of orchard fruits yet to be manifested; the plum, the peach, the cherry, and the pear were all successful; the curculio, leaf blight and rot had not yet attacked the plum and cherry; the peach was successful throughout the country, and injury of fruit trees or buds from the cold of winter was unthought of for many years thereafter.

The winter of 1832-3 was exceptionally mild; so much so that in January many of the smaller shrubs in sunny situations were nearly in full leaf, only to be sadly nipped, however, by unusual cold before the final opening of spring.

The earliest particulars of a horticultural character pertaining to the history of Michigan are connected with the origin of the trees and the planting of the orchards of the French "habitans" and the Indian traders at various points in the State. These will be quite fully noticed in the histories of the several counties, for which reason we only quote an extract from Bela Hubbard (page 355, Pioneer Collections, vol. 1), bearing upon the general subject.

"Though many of the farms so closely crowded along the (Detroit) river banks had orchards, comprising several hundreds of these fruit trees, and few were entirely destitute, it is singular that little is known of their history.

In answer to inquiries, old people will tell that their ancestors obtained the trees from Montreal, to which place they were brought at a still earlier day, from Normandy or Provence, but they have no knowledge when or from whence. The prevailing opinion is that the seeds were brought from France, and planted as soon as the first permanent settlements were made on the straits, about a century and a half ago. The present generation remember well the days of their boyhood, passed beneath the shade and in the enjoyment of the fruit of these trees, which, in their recollection, were even then of great size.

"Before further considering the mystery of their origin, the character of these orchards claims our attention. When we recognize that from the orchards on this river have emanated many noted kinds of apples, still extensively appreciated throughout the northern States, it will be apparent that they contained no wild or common fruit. From here were disseminated the famous Calvilles, both red and white, the Detroit Red (Roseau of the French), the Pomme de Nieve, or Fameuse (the celebrated Snow apple of America), all fruits of a wide reputation. Besides these are several not so well known—the Gray apple, Russets, noted for long keeping. Pearmains and others. Almost every orchard has one or more of these noted kinds.

"As cider fruit these apples maintained a reputation long after the influx of settlers from the eastern States. In this respect they were considered to surpass the apples of New England, and to be second only to the celebrated New Jersey product.

"Forty years ago a few cider mills of French construction were in existence. They were quite unique. The crusher was a large stone or wood cylinder, six or eight feet in diameter, and from six to ten inches in thickness. It turned on a wooden axis, fastened to a center-post, and was carried around by horse power. It ran in a trough dug out of a large tree, and put together by sections. The press consisted of a long wooden lever, acting upon a platform, and held down by tackling.

"But the crowning glory of the French orchard was the pear tree. Nearly every homestead possessed one, some two or three, few exceeded a half dozen. Such was its wonderful size and productiveness that one specimen usually amply satisfied the wants of a family."

Mr. Pratt, of the Peninsula Farmers' Club, at a meeting of that society in 1869, remarked that "Apple trees are often found growing wild, bearing every year, of course without care. Among the Indians, as far north as Mackinac, you find apple trees doing well. Notwithstanding neglect, the quality of these apples is fair, texture fine, and never affected by disease. The Indians bury them, much as you would potatoes, and they keep till February. These apples are taken from the trees in an unripe condition, for if allowed to remain longer they may be appropriated by others. These trees, if cultivated, produce much better fruit. This he had seen tested. Indian apple trees are found as far north as Cheboygan, and from two to five miles from the lake. Those near Lake Michigan are usually larger than those further back, or near the smaller lakes. He has seen some thirty feet high. They attained that height, probably, because they grew in the midst of forests. On the island of Mackinac, even, he had seen fine bearing trees. During the war of 1812 there was a fortification on Snow island. Currants were planted there then, which are still growing and produce fine fruit."

There are numerous other instances of very large or very old trees which will be noticed in connection with the counties in which they occur.

Probably the earliest horticultural society in Michigan was in March 5 to 16, 1841, at Detroit, but being a local organization it will be more fully noticed in the history of Wayne county.

J. C. Holmes, of Detroit (in Pom. Soc. Report for 1873, p. 345), says: "On the 9th of September, 1853, a convention of nurserymen from the southern part of Michigan was held at Jonesville. The object of the meeting was to establish as nearly as possible, uniform prices for fruit trees; also for the purpose of discussing such subjects connected with horticulture as might be deemed interesting and beneficial not only to nurserymen, but to the citizens of our State. A schedule of prices was reported to the convention and after some discussion adopted. This meeting adjourned to meet at such time and place as the chairman and secretary might appoint."

"In pursuance of this arrangement a convention of nurserymen and fruit growers was called and met at Adrian on the 24th of February, 1854. At this meeting there were present B. W. Steere, Isaac Chase, D. K. Underwood and B. F. Strong, of Adrian; Charles E. Perigo, Toledo; John Merritt, Tecumseh; C. H. Hageman, Blissfield; C. C. Cooley, Hudson; Haynes Johnson, jr., Hillsdale; Jesse Maxson, Pittsford; John T. Blois, Jonesville; J. C. Holmes, Detroit; and A. K. Bentley, Monroe."

At this meeting a constitution was adopted with the title of Michigan Nurserymen and Fruit Growers' Association.

For some unexplained reason there seems to have been an omission to elect permanent officers for the Association, which adjourned till June, 1854, but failed to meet at that time. The next meeting was on the occasion of the annual meeting on January 9, 1855, at which time J. C. Holmes, of Detroit, was elected President; J. C. Perigo, Toledo, Ohio, Vice President; and J. T. Blois, Jonesville, Secretary and Treasurer.

The next annual meeting of the Association was held at Jackson on January 8, 1856, when A. C. Hubbard, of Detroit, was elected President, J. T. Blois, of Jonesville, Vice President, and W. K. Gibson, of Jackson, Secretary. The meeting adjourned to next meet at Jackson on September 2, 1856, at which time the Association re-assembled and, in the absence of the President, the chair was occupied by Vice President Blois.

Interesting discussions were had at this as at previous meetings, and a large collection of fruit was exhibited.

This was the last meeting of the Association, which failed to hold its next annual meeting, and thus became disorganized.

During the year following the demise of the foregoing Association propositions emanating from various sources appeared, proposing a meeting at Jackson for the formation of a State Horticultural Society on September 8, 1857. The call was responded to by a very considerable number of horticulturists from various parts of the State, who organized a meeting and appointed a committee to draft a constitution and by-laws, which were adopted, with the title of "Michigan State Horticultural Society," when H. G. Wells, of Kalamazoo, was elected President; R. F. Johnstone, Detroit, Secretary; P. B. Loomis, Jackson, Treasurer; Hiram Walker, Detroit, D. K. Underwood, Adrian, John T. Blois, Jonesville, Linus Cone, Troy, G. W. Nelson, Grand Rapids, William Bort, Niles, Directors.

The meeting also appointed a standing committee on fruits, consisting of H. G. Wells, Kalamazoo; T. T. Lyon, Plymouth; Daniel Cook, Jackson; W. Davis, Detroit; Prince Bennett, Ypsilanti; William Adair, Detroit, and R. F. Johnstone, Detroit.

The constitution fixed the second Thursday in December as the date of the annual meetings; but as the time approached, in compliance with requests from various sources, the meeting was deferred till January 7, 1858, at which date the Society assembled at Kalamazoo. This meeting was a large and interesting one, and in its report of the proceedings the Kalamazoo Telegraph speaks of the display of fruit as follows:

"The display of fruit was large and most beautiful, one of the finest ever made in the State. Indeed, we are assured that for excellence, beauty and variety this collection surpassed the exhibit of the New York State Horticultural Society, made at Rochester last winter, said to have been one of the best ever seen in that State. Over one hundred different varieties of winter apples raised in this State were here exhibited, arranged tastefully on plates spread upon a double row of tables, showing all varieties of size, flavor and color, from the Monstrous Pippin down to the rusty Pomme Gris, or the sprightly blushing Lady apple. The Society has much reason to feel pride in this, its first annual meeting, at the interest manifested, and that it has secured the aid and support of the very best men in the State for the purposes of its organization."

At this meeting H. G. Wells, of Kalamazoo, was re-elected President; T. T. Lyon, of Plymouth, was chosen Secretary; and Stephen S. Cobb, of Kalamazoo, Treasurer. Vice-presidents were also elected, and the terms of service of the several directors were determined as provided in the constitution. The standing committee on fruits for the ensuing year were as follows: A. C. Hubbard, Detroit; T. T. Lyon, Plymouth; H. P. Penniman, Battle Creek; Daniel Cook, Jackson; William Adair, Detroit; J. C. Holmes, Lansing; B. Hathaway, Little Prairie Ronde.

A list of apples for general cultivation was also recommended.

B. Hathaway presented a seedling apple for the consideration of the standing fruit committee, which was recommended for trial, and for which he proposed the name, Paw Paw, from the place of origin. It was noticed and described in the Michigan Farmer and elsewhere under this name, and it is so described in Downing's Fruits and Fruit Trees of America. The committee were not informed that it had been known locally as Ball, Rubicon, Western Baldwin, and possibly by other synonyms. The committee's description appears in Michigan Farmer for 1858, at page 49.

On June 30 and July 1, 1858, the Society held an exhibition at Detroit. Contributions were freely made from florists, market gardeners and small fruit growers, as well as from the private establishments of citizens. A large and beautiful collection of roses, including a number of recent and still rare varieties, was received during the second day, from George Taylor, of Kalamazoo. The exhibition was, in some respects, a very fine one.

It had been expected that a room in Firemen's Hall, intended for library purposes, would be in readiness for the occasion; failing in this, a newly fitted, unoccupied store on Woodward avenue was secured. President Wells was not in attendance and the entire responsibility devolved upon the Secretary. Several circumstances conspired to prevent the adequate advertisement of the exhibition, and doubtless owing in part to this cause the attendance was light.

For some reason not well understood, upon the approach of the time for the annual meeting there was an apparent reluctance on the part of the President to participate in the steps necessary to its assembling, and the Secretary being unwilling to assume the entire responsibility, the call was not issued, and the Society became disorganized.

At Grand Rapids an organization had existed several years prior to 1872, known as the Northern Michigan Agricultural and Mechanical Association, which had held its fairs upon the grounds of the Kent County Agricultural Society. Some jealousy and rivalry had arisen between this association and the State Agricultural Society; and in 1872, the association having fixed upon the third week in September, the State Agricultural Society chose the same date for its fair at the neighboring city of Kalamazoo. The result of such conflict of dates was a strong rivalry between the two exhibitions, both of which were large and creditable.

The horticultural portion of the exhibition at Grand Rapids was in charge of the Michigan State Pomological Society, which so far had continued its headquarters at Grand Rapids.

The obvious impolicy of a continuance of the rivalry spoken of led to conferences between the two rivals, and finally, prior to the holding of the fair of 1873, to a consolidation of the two, and the holding of the fair for that year at Grand Rapids—the consolidated society retaining the title of the State Agricultural Society.

The Central Michigan Agricultural Society was organized in 1866, with headquarters at Lansing. It inaugurated the plan of a spring exhibition in addition to the usual autumn fair. Under an amendment of the law by the Legislature, the society was re-organized, including in its re-organization the counties of Ingham, Clinton, Eaton, Shiawassee and Livingston.

An Eastern Michigan Agricultural and Mechanical Association was organized in 1871, including what is known as the Saginaw valley.

The State Agricultural Society, which for the first time held its annual fair at Grand Rapids in 1873, has not repeated its exhibition at that place. For this reason, apparently, the people of that locality, in 1874, organized a new district society, known as the Western Michigan Agricultural and Industrial Association, which has held its fairs annually on the grounds of the Kent county society down to the present time. The tributary region does not appear to be specified, although its officers are drawn from the west two tiers of counties between Grand Traverse and the south line of the State.

On May 27, 1884, at a meeting held at Grand Haven, Ottawa county, the West Michigan Fruit-Growers' Society was organized. Its objects, as specified by a resolution, were:—"To unite the fruit growers along the western shore of this State for the purpose of promoting the best methods of cultivating and marketing fruit."

In its proceedings, however, the society does not confine itself to the departments set forth in its declaration of objects, since its programmes and discussions cover the entire field of horticulture.

In 1855 Esek C. Roberts, long a resident of Salem, Washtenaw county, sent to the State Agricultural Society an essay on the cause and cure of potato rot, which at that time had become a serious drawback upon the profitable cultivation of that esculent. This was with Mr. Roberts a secret by the use of which he claimed to be able to renew the health and vigor of the plant and insure exemption from the disease. The essay was furnished in competition for a premium offered, in winning which, however, it was not suc-

cessful. The essay proceeded upon the assumption that the disease is due to artificial treatment in winter storage, and proposed that a permanent seed bed be maintained by heavy mulching in winter, and that seed be taken therefrom in spring and immediately replanted.

Mr. Roberts also embarked somewhat in the growing of grapes and the manufacture of wine for medicinal purposes. He also did a good deal in the culture of Spikenard (*Aralia racemosa*), for the berries. The product of these he largely increased by a system of pinching, which had the effect to considerably increase the number of clusters. The ripe fruit was used in the manufacture of wine which attracted attention locally and received the endorsement of physicians in favor of its use for medicinal purposes.

As recently as 1848 there were very few horticultural organizations upon the American continent. The only prominent ones at that time were those of Massachusetts and Pennsylvania. No meetings for horticultural discussions, bringing together experts from distant localities, had been held, and general knowledge of fruits and fruit culture was comparatively crude and limited.

In September, 1848, the New York State Agricultural Society's annual fair was to occur at Buffalo. A convention of fruit-growers was called at that city, on September 1, a few days prior to the State fair, which brought together a very considerable number of the leading pomologists of the State of New York, together with several from the west, among whom was A. T. Prouty, of Kalamazoo, Michigan, who was one of the vice presidents. Specimens of Michigan grown fruits attracted much attention, and in some cases their identity was questioned on account of their excessive size and high color.

A simultaneous but apparently wholly independent movement had arisen among eastern fruitgrowers under the auspices of the American Institute, although at the call of the two horticultural societies already named, which resulted in the holding of a convention in the city of New York on the 10th of October, 1848, which assumed the title of the American Congress of Fruit-growers. The convention included a large number of eastern pomologists, and was presided over by the late Marshall P. Wilder, at the time the President of the Massachusetts Horticultural Society, who has stood so long and so prominently at the head of American pomologists.

At this meeting a special fruit committee was appointed, charged, among other things, with the duty of preparing a list of fruits to be recommended for general cultivation. This committee, after careful consultation, reported "that they find it impossible, in the present state of pomological information to offer to the convention now assembled any extended list comprising any considerable number of fruits worthy of general cultivation." The report of this committee is believed to have been nearly, if not quite, the first distinct and authoritative indication of the now well established fact that all fruits are more or less locally successful, the more full realization of which fact has resulted in the framing of lists for districts, States and even more limited regions.

The impolicy of continuing two distinct organizations within the same territory and with the same object was at once realized, and conferences were held which resulted in the consolidation of the two organizations into a single body, which assumed the title of the American Pomological Society, which has since come to be "known and read of all men."

The Michigan Farmer has been and is intimately associated with the horticulture of the State. It was the outcome of an enterprise commenced at Detroit in 1841, and received its present name at Jackson in 1843. Its history will be given in a separate section.

The State Agricultural Society, to which the horticulture of the State has been and is largely indebted, was organized in March, 1849. For its history a separate section is appropriated.

The same is also true of the State Agricultural College, opened in May, 1857.

The original State constitution provided for the continuance of the State capital at Detroit until 1847, when the Legislature was authorized to determine its permanent location, which, greatly to the surprise of the people, and perchance of even the Legislature, it was fixed at Lansing, which at that time was but an incipient village in a comparatively unknown and unimproved region. The location of the capital here has, beyond doubt, essentially hastened the settlement and improvement of the vicinity agriculturally, and in a still higher degree horticulturally, through the bearing it has had upon the character of the population and the tendency of wealth and refinement to the locality.

In 1853 the Detroit & Milwaukee Railroad was opened to Grand Rapids, and not long after to Grand Haven, thus opening a naturally rich agricultural region and rendering it available for the growth of the commercial products of horticulture, to which much of its soil is well adapted.

Prior to the rise of commercial fruit culture in the State fruit seems to have been, in law, held to be without value, and for that reason as not requiring statutory protection. Public opinion also ran so strongly in the same direction that raids upon fruit yards, orchards and melon "patches," both by day and night, were commonly indulged in, even by persons of fair reputation, while to attempt to punish the aggressors by legal process was to incur the ridicule, if not even the censure of society.

When fruit came to be to a considerable extent a merchantable commodity, and in consequence, its disappearance in this manner a pecuniary loss, a change gradually became manifest in the views of at least the better class of people on the subject, which ultimately found expression in the enactment of laws for the protection of plants, trees and fruits—laws all the more stringent on account of the practical impossibility of protecting them against intrusion and plunder.

As indicating the general tenor of the several statutes enacted for this purpose, one of the earlier, if not even the earliest, is quoted as follows:—

"AN ACT to protect vineyards in the State of Michigan.

"SECTION 1. *The People of the State of Michigan enact*, That no person shall enter a vineyard in the State of Michigan, during the months of August, September and October and cut or carry away any of the fruit of a vineyard without the consent of the owner or occupant of the same, under a penalty of five dollars fine, or twenty days imprisonment in the county jail, or both, in the discretion of the court, for each offense committed.

"Approved April 3, 1869.

Soon after the appearance of "peach tree yellows," at St. Joseph, with its threatened appearance at South Haven, the conviction of the peach growers at the latter place grew into confident belief of its contagious character, and

that prompt removal and destruction of diseased trees is the only trustworthy remedy. In pursuance of this conviction the peach growers of Van Buren, Allegan and Ottawa counties joined in a petition to the Legislature of 1874-5, accompanied by a bill, the scope of which is indicated by its first section, which reads as follows:—

SECTION 1. *The People of the State of Michigan enact*, That any and all trees in the counties of Allegan, Van Buren and Ottawa, whether peach, almond, apricot or nectarine, infected with the contagious disease known as the yellows, shall be held to be without pecuniary value, and the fruit unfit for use as food, and that as the best known means of preventing the spread of such disease, both tree and fruit so infected shall be subject to destruction as public nuisances.

The act consisted of twelve sections. It was given immediate effect and received the Governor's approval May 1, 1875.

The act was exceedingly simple and direct, but there were objections raised against it, and a subsequent Legislature was asked to revise and modify it, with the result that its conditions were rendered so tedious and difficult of execution that it has almost, if not altogether, become a dead letter upon the statute book. With the revision it was made to apply throughout the State.

Many years since, while the Michigan Farmer was yet a monthly, Mr. B. Hathaway contributed to its columns a series of controversial articles in which he objected to the use of root-grafts as stock on which to topgraft other varieties. Subsequently, in the Report of the State Board of Agriculture for 1871, he says, in the course of a contribution to its pages:

“The propagation of a uniform class of stocks from some one of our most hardy and free-growing varieties, to be re-grafted, at a suitable age, with the desired kinds, has for its commendation, not only the endorsement of our leading horticulturists, but has demonstrated in practice that it has advantages, especially for a great number of our most popular sorts, that will ultimately insure attention. In my own nursery I am using the Northern Spy extensively and, for this latitude, I think it, all in all, the best variety for this purpose we have.”

Further on, in the same article he remarks:—

“The best lands in the State for fruit of all kinds, excepting possibly peaches, are our hilly, strong, gravelly soils, such as have a natural drainage, both on their surface and in their composition.”

Although something had previously been known respecting the special adaptation of the easterly shore of Lake Michigan to the growth of peaches and other tender fruits, the first event that drew public attention prominently to the matter was the planting of the extensive commercial orchards of George Parmelee, who, in 1847, became convinced of the importance of the protection afforded by the unfrozen waters of Lake Michigan, purchased and settled upon one hundred and sixty-three acres of land a little north of Benton Harbor, and the next spring cleared, fenced and planted two and a half acres of orchard. This beginning he followed up as rapidly as possible till he had ninety-eight acres under orchard, mostly peaches, which he was compelled to protect by a fence high enough to shut out deer, to prevent them from tearing the trees with their horns.

In the spring of 1850 he planted the first Crawfords in the peach belt, grown by him from four trees purchased in dormant bud at Cleveland and Buffalo upon their first introduction there.

The first considerable impetus to peach planting occurred upon his contracting his first considerable peach crop for \$1,500, delivered at St. Joseph.

Very naturally, since the earliest orchard planting occurred, in this region, while the more northerly portions of the lake shore were yet comparatively unknown, save for lumbering purposes, the conclusion was very general that this immediate region constituted the limit northward of the lands adapted to peach culture, and this assumption, amounting as it did with very many to a conviction, was doubtless at the foundation of the extravagant inflation of the price of lands which for a time prevailed here.

The inference, however, was so natural and obvious that the cause of exemption from extremes of cold, as experienced here, must necessarily be more or less potent along the whole eastern shore of the lake, that as early as 1864 or 1865, in a paper prepared for the transactions of the American Pomological Society, T. T. Lyon advanced the opinion that this exemption would be found potent at least as far north as Grand Traverse. In fact, very soon after the rise of this interest in Berrien county, and prior to its culmination, experiments for the testing of such supposed adaptation were in progress at various points along almost the entire distance.

The growth of these various local interests, and the opening of a trade from the region in fruit products, soon rendered manifest the importance of concerted action, and the consciousness of such need resulted in the creation of various local organizations, which will be noticed in connection with the several counties.

Above and beyond this, however, there gradually arose an obvious need of wider and more perfect concert of action, which finally manifested itself in a call for a meeting to consider the propriety of organizing a general Pomological Society. A preliminary meeting for this purpose assembled at Grand Rapids, on February 11th, 1870. The meeting organized by electing S. L. Fuller president, S. S. Bailey and L. S. Scranton vice-presidents, A. T. Linderman secretary, and Henry S. Clubb, S. L. Fuller and L. S. Scranton a committee to draft articles of association.

An adjourned meeting was held on February 26th, at which the report of the committee on articles of association was received, discussed, amended and adopted.

The organization thus completed assumed the title of State Pomological Society of Michigan. A president, secretary and treasurer were provided for, and these officers were constituted an executive committee. Their term of office was to expire on December 31st. The secretary's office was located at Grand Rapids. The meetings of the society were to occur monthly.

After the adoption of articles of association the following officers were elected:

President—H. G. Saunders, of Grand Rapids.

Secretary—A. T. Linderman, of Grand Rapids.

Treasurer—S. L. Fuller, of Grand Rapids.

Henry S. Clubb, James Hamilton and Daniel Upton were elected as a corresponding committee.

The first meeting of the new society occurred on April 6th, at which time a letter was read from George Parmelee, then of Old Mission, Grand Traverse county, expressing sympathy with the objects of the society.

Many fine specimens of fruits were also exhibited and discussed, together with various other matters.

The May meeting occurred on the 3d of that month, at Grand Rapids, during which a list of apples was adopted and recommended for general cultivation, consisting of three summer, five autumn, and seven winter apples. The discussion of the list was quite prolix and developed much divergence of opinion.

The June meeting occurred on the 16th at Grand Rapids. It was not largely attended, although the display of strawberries and cherries was good, and these two fruits and their care and management was the subject of an exhaustive paper read on the occasion by Henry S. Clubb.

There appears not to have been a subsequent meeting of the Society till the holding of its first annual fair, which occurred on September 27th to 30th, in connection with that of the Kent County Agricultural Society, and upon its grounds. On the Thursday afternoon of the fair an address was delivered before the two societies jointly by Hon. Flavius J. Littlejohn, of Allegan, which was followed by one from Governor Baldwin.

During 1870 the Western Michigan Agricultural and Horticultural Society, of Spring Lake, appointed an orchard committee to examine and make awards upon entries in that territory.

A report of their awards was also made to the State Pomological Society and published in its transactions for that year. The idea seems to have been taken up by the State society, which continued the practice from that time forward for several years.

The meetings of the society for October and November were omitted, the next having been the annual meeting, which occurred on December 6 at Grand Rapids. A large amount of incidental business was transacted.

Among others a carefully prepared paper was read by Secretary Linderman, advocating the establishment of a test garden under the supervision of the society, which suggestion failed to obtain the endorsement of the society.

The second article of the constitution was amended so as to provide for eight vice-presidents, and such local secretaries as the society shall deem needful.

The officers elected for the year 1871 were:

President—Jonathan P. Thompson, Grand Rapids.

Vice-presidents—Henry S. Clubb, Grand Haven; George Parmelee, Old Mission; Henry Holt, Cascade; T. T. Lyon, Plymouth; George Taylor, Kalamazoo; William Bort, Niles; Payne K. Leach, Utica; S. B. Peck, Muskegon.

Secretary—A. T. Linderman, Grand Rapids.

Treasurer—S. L. Fuller, Grand Rapids.

Executive Committee—J. P. Thompson, A. T. Linderman, N. P. Husted, C. L. Whitney, George H. Linderman.

Local Secretaries—B. Hathaway, Thomas Archer, Joseph Chapel, Edward Bradfield, James Hamilton, J. G. Ramsdell.

A committee was also appointed to petition the Legislature to provide for the incorporation of the society.

The society adjourned to the first Tuesday in January, 1871.

On January 3d, 1871, the society met at Grand Rapids. The committee charged with the duty of securing legislation looking to the incorporation of the society asked and were allowed additional time.

The Kent County Agricultural Society at the joint fair in September, 1870, had placed the sum of \$200 at the disposal of the Pomological Society, to be

awarded in premiums. The awards having exceeded that sum, \$50 were now added, for which the thanks of the society were tendered.

After the transaction of considerable business the society listened to an address by President Thompson; also to a paper by B. Hathaway, of Cass county.

The February meeting of the society was held on Tuesday, the 7th, at its rooms at Grand Rapids, with a fine display of fruit for so late in the season, also jellies from Mr. Husted, and grapes and wines from E. Bradfield and William Haldane.

A package of cions of Russian apples, badly dried, received from the Commissioner of Agriculture, at Washington, were left in charge of the secretary till time for grafting, but proved too badly dried for recovery.

The committee on incorporation reported, stating that a special incorporation was beyond the power of the Legislature. They therefore submitted the draft of a bill for a general law for the purpose. The report was accepted and adopted, and the committee was instructed to ask the Legislature to enact a law accordingly.

The society then listened to an exhaustive paper on grape culture by Edward Bradfield, after the discussion of which the meeting adjourned.

At the March meeting various reports were made as to the prospect for a crop of peaches, but generally to the effect that the buds were yet sound on high locations.

The president announced the death of Sanford Howard, secretary of the State Board of Agriculture, which occurred at Lansing, on Friday, March 10th.

Apples and jellies were exhibited by several persons, and discussions were had on grapes and wines, also upon grafting and the influence of the stock upon the graft.

At the April meeting, which occurred on the 4th at the society's rooms, apples were exhibited by several persons, also Catawba grapes, which had been kept in cork dust.

A paper was read from Judge Ramsdell, of Traverse City, giving a chapter of his practice and experience in grape culture.

On May 2d the next meeting occurred at the society's rooms, when the committee on incorporation announced the enactment of the desired law, whereupon the matter was re-referred to the committee with instructions to report at the next meeting. After some preliminary action looking to the holding of the society's second annual fair during the following September, an adjournment was had till May 16th, at which date the society met to receive the final report of the committee on incorporation and to re-organize under the recent law.

The committee reported that three weeks' time would be requisite to complete the necessary preliminaries to an organization.

C. L. Whitney, O. H. Simonds and A. T. Linderman were constituted a committee to take the necessary steps for the perfecting of the organization.

At the regular meeting on June 5th, 1871, C. L. Whitney, O. H. Simonds, A. T. Linderman, S. L. Fuller and E. Bradfield were constituted a committee to prepare a constitution and by-laws to be reported at the regular meeting in July.

Mr. H. Holt exhibited apples yet in good condition and John Suttle made a display of strawberries. Mr. Suttle and Mr. Husted each made a fine display of peonies and roses.

After a short discussion of curculios and plums the meeting adjourned.

The July meeting occurred on the 4th, for which reason, doubtless, it was very lightly attended.

The committee reported that the law required a three weeks' publication in a newspaper, which had been done.

The meeting adjourned till the next day, when the constitution and by-laws were reported by the committee. They were discussed, article by article, amended where needful and adopted.

The title of the society became the Michigan State Pomological Society.

The officers were to be a president, eight vice presidents, a secretary, a treasurer, and an executive committee of nine members, including the president, secretary and treasurer, four constituting a quorum.

The office was to be at Grand Rapids. The annual meeting to be held on the first Tuesday in December, and the officers elect to assume their offices on January 1st; the meetings to be held monthly. The limit of property to be held by the society to be \$20,000.

At the regular August meeting a communication was received from the Chief Signal Officer, U. S. A., and referred to a committee to report at the next meeting.

The following resolution was unanimously adopted:

Resolved, That the society proceed to collect fruit from the different parts of the State to be forwarded to the Richmond (American Pomological Society) fair, with a delegation.

The following persons were subsequently named as delegates: H. S. Clubb, A. T. Linderman, C. L. Whitney, S. L. Fuller and T. T. Lyon. Of these only A. T. Linderman was actually in attendance at Richmond.

The regular September meeting was held at Pomological Hall, on the grounds of the Kent County Agricultural Society, to complete arrangements for the approaching fair.

A committee was also appointed to supervise the collecting and shipping of fruits and grains for exhibition at the California State fair, to be held at Sacramento.

The second annual fair of the society was held September 12th to 15th, 1871, on the grounds of the Kent County Agricultural Society, but in connection with the Northern Michigan Agricultural and Mechanical Society.

The exhibit of fruit was exceedingly fine, in the estimation of many persons having seldom, if ever, been excelled. The premiums were very large and the competition exceedingly spirited. A set of premiums was offered for county collections of fruits, which were open to the entire State. In this class the first premium was awarded to Wayne county for a collection coming mainly from the trial orchards of T. T. Lyon, of Plymouth. The second was awarded to Kent county.

California contributed to the exhibit twenty-six varieties of apples, exceedingly large and beautiful, seven varieties of pears, some of them twelve inches in circumference, and others weighing a pound each, also seventeen varieties of grapes.

John Suttle, T. R. Renwick, Mrs. William Rowe, and others supplied large and beautiful collections of plants and flowers. So fine was the horticultural display as a whole that the remark was a common one that it was the distinguishing feature of the fair.

The society's October meeting was held at Spring Lake upon an invitation

extended by the society at that place. The discussions here were somewhat discursive, though mainly confined to apples and peaches.

Two tugs, chartered for the occasion, took the societies to Fruitport at the head of the lake, and just within the border of Muskegon county, making calls at several vineyards on the way, and returning to Spring Lake in season for an evening session, after which the visiting members took the train for their homes.

October, 1871, will be long remembered by the people of Michigan as the month of drought and forest fires; and also by the calamitous fire at Chicago, which swept so large a portion of that city out of existence.

The average rainfall, since 1864, had been 10.63 inches; while that of the summer of 1871 was barely 7.45 inches; leaving the summer 2.68 inches and the fall 3.55 inches below an average. Aside from this deficient rainfall the temperature of October was more than $6\frac{1}{2}^{\circ}$ above the average of the eight preceding years, while the moisture of the atmosphere was very much below the average. As the result of this unfortunate concurrence of circumstances everything combustible was "dry as tinder," and the consequence was a fiery devastation without parallel in the history of our State. The dread of fire almost equalled that of workmen in a powder factory. Throughout the pine woods, the dead and dry tree tops, left by lumbermen, were everywhere ready to burst into flame, if by accident or intent a spark should fall into their midst. The losses consequent upon the destruction of timber, buildings, fences, crops, etc., the failure to prepare the grounds and to properly put in seed for the next season's crops, and various other particulars, cannot be estimated or even imagined; while years were consumed in the effort to recover from their effects.

Previous to this fiery visitation, Mr. Charles Downing had accepted the invitation of T. T. Lyon to visit Michigan, and see something of its horticulture. In doing so he was accompanied by Thomas Hogg, long noted as a collector of plants in Japan, where he spent several years for that purpose.

Reaching Windsor late in the evening they were met at the train by T. T. Lyon, John Allen, and some citizens of Detroit, by whom they were conducted across the river and to quarters for the night. A portion of the next day was devoted to looking about the city and examining some of the notable old French pear trees of the vicinity; and on the approach of evening, cars were taken to Plymouth, where, the next day, the trial orchards of T. T. Lyon were looked over; and also that of John Allen, who had, at the time, a large number of Red Canada apple trees in full bearing, and who had purposely left the year's crop upon the trees in anticipation of this visit—this variety being a special favorite of Mr. Downing, although one that cannot be successfully grown in his vicinity. The crop upon Mr. Allen's trees was a very heavy one, and the fruits almost universally perfect. This show of fruit was an evident surprise to Mr. Downing.

This being Saturday, the Sabbath was passed at Plymouth.

On Monday morning, October 9, the party of four—Downing, Hogg, Allen and Lyon, started for the west shore of the State, intending to visit the fruit region at South Haven and other points; for which purpose they had been supplied with passes over the F. & P. M., D. & M., D. L. & N., and M. C. Railroads and branches. On reaching Jackson a stop was made to call on Mr. S. O. Knapp, of that place, who proved to be absent from home, and after a cursory look over his premises, on returning to the town, news was received

of the terrible fire which had broken out on the previous day at Chicago, and also of the general prevalence of destructive forest fires throughout northern and western Michigan. The next train west was, however, taken to Kalamazoo, where a change was to be made to the K. & S. H. Railroad, for South Haven.

While awaiting the South Haven train a call was made on Judge Wells, and attention was called to a vine of the then new Kalamazoo grape, at his residence, with a crop of fruit yet upon it. This Mr. Downing regarded as very large and showy, but lacking quality as compared with Catawba, which it resembles, although it is said to be earlier. The orchards and vineyards of the Messrs. Davis, of that vicinity, were also visited.

On returning to the station the fact was learned that Grand Junction had been burned, and that the train could not get through, and consequently had not arrived. The next train west on the Michigan Central Railroad was therefore taken, with the purpose to reach St. Joseph and South Haven via New Buffalo, but, on reaching Niles, news was received that no train had reached New Buffalo from the north for some time on account of forest fires.

The programme was, therefore, again changed, the next train eastward was boarded, and the party returned to Kalamazoo and thence took cars for Grand Rapids, where, after calling on President Thompson, of the State Pomological Society, with several others, the train was taken for Spring Lake, where the vineyards of Hunter Savidge and several other plantations were visited.

A portion of Mr. Savidge's vineyard was still carrying its full crop of fruit, the quantity of which was so great that Mr. Downing expressed the suspicion that it would prove injurious to the vigor and health of the vines.

A trip to Fruitport at the head of Spring Lake was made by row boat, calling at several plantations on the way.

It had been purposed by Messrs. Allen and Lyon to extend the trip to Manistee and Grand Traverse, but Mr. Downing's arrangements contemplated his return home within the week. The train was, therefore, taken at Fruitport for Nunica and Ionia, and thence to Lansing, where a visit was made to the State Agricultural College, and the members of the faculty present were treated to a fine box of grapes, put up as a present to them by Mr. Savidge, of Spring Lake.

Returning to Lansing, the train was taken for Plymouth, where Allen and Lyon left the train, while the others continued their homeward journey.

After his return, under date of October 30th, Mr. Downing addressed a letter to President Thompson, from which the following are extracts:—

“Our visit to Michigan was a pleasant and instructive one, and the portion of the State we visited seemed well adapted to fruit growing, and, from all that I could learn, it is one of the most profitable pursuits to the land owner.”

“I must say a word about Michigan grapes, which appeared healthy and productive, and in most localities I saw—even in the light, sandy soil around Spring Lake and the neighborhood—they were vigorous, healthy and productive—too productive, so I thought, for the good of vines the coming season. If the growers would get into the habit of thinning their fruit, taking out one-third, or even more, in unfavorable seasons, they would find it to their advantage in having earlier and better fruit, which would command better prices.”

"I cannot close without again expressing my cordial thanks for the kind attentions I everywhere received during my visit in your State, the second week of October."

The State Pomological Society held its November meeting at Grand Rapids on the 7th of that month.

The president recommended the procuring of a creditable form for a diploma, to be given as a premium. This was approved and a committee was appointed to carry it into effect.

An address was listened to from P. B. King, of Colorado, upon the climate, soil and agricultural resources of that territory.

Mr. Pratt, of Ionia, who had been appointed to award certain premiums offered by Mr. Husted in connection with the Wagener apple, reported verbally, but without a distinctive statement of awards made.

In response to a previous request Judge Wells, of Kalamazoo, stated the history of the Kalamazoo grape, as follows: It was so named here by Mr. Davis. I brought it to this village some ten years since from the city of Steubenville, Jefferson county, Ohio, where I found it in possession of Mr. Dixon, who informed me that he had grown the parent vine from seed that he knew had been taken from the Catawba. Within a few years after I obtained it, the original vine was destroyed by fire.

The proposal to insert the name of the exhibitor upon the entry card was discussed and laid upon the table till the next meeting.

The December meeting, being the annual meeting, was held at the society's rooms at Grand Rapids.

The following were elected officers of the society for the ensuing year:—

J. P. Thompson, Grand Rapids, president.

Henry Holt, Hunter Savidge, George Parmelee, T. T. Lyon, E. P. Kelsey, Joseph Bray, B. Hathaway, I. E. Ilgenfritz, vice-presidents.

C. J. Dietrich, Grand Rapids, secretary.

S. L. Fuller, Grand Rapids, treasurer.

N. P. Husted, Lowell; H. G. Light, Greenville; E. Bradfield, Ada; G. W. Dickinson, Grand Rapids; C. S. Fassett, Spring Lake; W. I. Blakely, Grand Rapids, executive committee.

The question respecting the appearance of the exhibitor's name upon entry cards at fairs being under consideration, on motion of Mr. E. Bradfield it was—

Resolved, That at all future exhibitions of this society the name of the article exhibited, with the name of the exhibitor and his place of residence, with the name of the grower of the fruit, be displayed upon the entry card: *Provided*, That when the entry is of a collection, the name of the exhibitor be given as that of the collector, while the name of the grower shall be upon each of the samples of fruit that make up such collection.

After the disposal of routine business the society adjourned to the first Tuesday in January, 1872.

On January 2nd, 1872, the society met at Grand Rapids. Reports as to the fruit prospects were generally favorable. Opinions as to what degree of cold would kill the fruit buds of the peach differed greatly, varying from 16° to 23°. It was generally conceded, however, that much would depend upon the condition of the trees at the time. The subject of atmospheric drainage and of differences of temperature as the result of elevation was quite fully discussed.

The president read letters from E. W. Bull, of Concord, Massachusetts, and Geo. W. Campbell, of Delaware, Ohio, respecting the Delaware and other grapes, which were followed by a protracted discussion.

Professor Tracy, of the Agricultural College, was called on, and made a short statement respecting horticultural operations there.

The increasing interest in horticulture, both in this State and elsewhere, was spoken of by R. F. Johnstone, of the Michigan Farmer.

W. H. Schuyler, representing the Alden Fruit Dryer, was introduced and gave an exhaustive address, setting forth the characteristics of this dryer and its product, a quantity of which was on exhibition and was cooked at Sweet's hotel, and received the unqualified commendation of the committee.

Both the Alden Dryer and the Iona grape were further discussed, Mr. Bradford describing the aspect in which his Ionas are planted and his mode of treatment and its results, in reply to the queries of S. B. Peck, of Muskegon.

Upon motion of the secretary—

Resolved, That a reporter be appointed to assist the secretary, and that Charles W. Garfield be appointed to fill the office the ensuing year, or until the next annual election.

A lecture by Professor A. J. Cook was announced for the next monthly meeting, after which the society adjourned.

The Executive Committee met at Grand Rapids on February 6, 1872, for the preparation of a premium list for the annual fair, to occur on September 16th to 21st following, which was to be held in connection with that of the Northern Michigan Agricultural Society.

Much regret was expressed that the State Agricultural Society should have fixed the State fair during the same week already selected by the Northern Michigan Society, which must determine also that of the State Pomological Society, and a committee was appointed and resolutions adopted by the executive committee, with the hope of being able to avoid the threatened collision, but without effect.

The society held a meeting on the same day with the meeting of the committee, but it was adjourned without transacting any business beyond listening to the lecture of Professor Cook.

The next meeting of the society occurred at Grand Rapids, on March 5th.

A letter was read from H. E. Bidwell, of South Haven, suggesting changes in the premium list, which were deemed inexpedient.

A life membership was voted to Professor A. J. Cook, in consideration of his lecture a month since.

An invitation was received from Professor Tracy, of the Agricultural College, inviting the society to hold its April meeting at Lansing, which was accepted.

At a meeting of the executive committee \$100 was allowed the president and \$150 to the secretary for their services during the current year.

The State Pomological Society met at Lansing on April 2d, 1872.

President Thompson opened the session with a few appropriate remarks, which he closed with a touching eulogy of John Allen, of Plymouth, recently deceased, who had been actively interested in the union fair of 1871, and a pioneer in fruit culture.

Reports of fruit prospects were made, but were generally unfavorable so far as peaches were concerned, except from the vicinity of Lake Michigan. Other fruits were favorably reported.

For so late a date the display of apples was very large and creditable.

Professor Kedzie, of the Agricultural College, read an exhaustive paper on the subject of peach tree yellows.

An invitation was received from President Abbot to visit the Agricultural College in a body, which was not accepted on account of the bad condition of the roads.

The committee on apples, in their report of fruits exhibited, took occasion to recommend Red Canada, Baldwin, Golden Russet, Rhode Island Greening, Peck's Pleasant and Roxbury Russet as profitable varieties. A motion was submitted to strike out Golden Russet and insert Tompkins King, which did not prevail.

A paper was read by T. T. Lyon, of Plymouth, in response to the following queries by the president:

1. Will you inform me if there is such an apple as Steele's Red cultivated in Wayne county, and what are its characteristics?

2. Is the apple known as Red Canada of Canadian origin, or did it come from the east?

3. Why is it that when Michigan fruit growers order the Red Canada from eastern nurserymen they get the Baldwin?

4. Do you recommend Red Canada as superior to the Baldwin, and if so, why?

The substance of this paper will appear in the history of Wayne county.

This paper was followed by a paper by Professor W. K. Kedzie on the climate of Michigan.

The subject of transplanting was introduced and S. O. Knapp, of Jackson, was asked for his views and practice, which he gave in favor of thorough work.

Professor A. J. Cook then gave a short lecture on destructive insects, which he illustrated by specimens. He further urged the necessity of a State Entomologist.

A committee was voted to prepare a list of apples to be recommended for domestic or amateur uses, which committee the president proposed to announce through the press after full consideration.

The society having provided for the appointment of a committee on orchards, Professor A. J. Cook was appointed to accompany them as entomologist.

W. H. Schuyler, representing the Alden Fruit Dryer, being present with specimens of the product, was called upon for explanations, which were freely given.

A proposal to provide for the endowment of the society was discussed, and T. T. Lyon, S. O. Knapp and Hunter Savidge were appointed a committee to consider the matter. President Thompson was subsequently added to the committee.

The society adjourned to meet at Grand Rapids on Tuesday, May 7th.

At the society's meeting in May a letter was read from J. C. Holmes, of Detroit, giving a minute account of the Detroit Horticultural Society, which was organized at Detroit in 1846.

An article was read from Mr. Chamberlain, of Benton Harbor, on peach tree yellows.

Mr. Ford applied hot water to the base of a tree supposed to be affected with yellows, which soon revived and continued healthy.

The society accepted the invitation of the Berrien County Horticultural Society to hold its June meeting at Benton Harbor.

The article of the society's constitution establishing the secretary's office at Grand Rapids was stricken out.

At the society's Benton Harbor meeting on June 12th, the attendance was large. The session was opened with a lengthy address by President Thompson, followed by reports of the condition of fruit crops generally.

The culture of figs at the north was discussed for a few minutes by H. E. Bidwell of South Haven, and also by William M. Robinson.

Mr. Thresher gave an address on the history of Benton Harbor, followed by an essay by Mr. Nowlen on "Marketing Fruits."

A paper was read by Charles E. Soule, of Spring Lake, on "The Best Peach," which, in the judgment of the essayist, was the Barnard, on account of its productiveness.

At the close of the discussion a vote was taken as to the preference of those present between Early Crawford and Barnard; result, twenty-nine votes for the former and twenty for the latter.

The Snyder blackberry, various forms of fruit packages, and also the ever interesting subject of yellows, came up for short discussions; after which, a lengthy report of the fruits on exhibition was made. Among strawberries the Wilson was the leading variety.

Apples, the growth of 1871, were shown by A. D. Broom, J. Ells, and N. P. Husted.

Cherries, other fruits, green and still upon the branch, and also canned fruits, were shown in abundance.

Reports were made as to the prices of fruit lands. At Fruitport \$50 to \$100 per acre. At South Haven about the same price. At Benton Harbor, improved lands carrying bearing orchards, \$1,000 per acre.

An essay, entitled "The History of the Peach at St. Joseph," was read by Mr. Chamberlain of the St. Joseph Herald. At its close Mr. Bronson stated that the first cultivated (budded?) fruit was grown in his garden. He cut the tree down and counted thirty-seven circles of successive growth, making the tree thirty-seven years old.

C. L. Whitney, of Muskegon, then reported, at considerable length, on behalf of the plant and flower committee. In the course of the report he remarks: "Who ever knew a bad man or an evil woman to be a hearty, true lover of the real beauties of earth? If the undevout astronomer is mad, what shall we say of vile or criminal floral admirers? They are past accountability."

"Plant flowers, train vines, cultivate the beautiful in art or nature. Study the volume of nature, and prepare yourselves to become architects of the noble and beautiful in character, and safe guides in the ordering of the homes of the children for whose instruction you are responsible."

After enumerating the various individual exhibits, he adds: "We have not said which is best, for we cannot. If we could we dare not."

The report is fancifully and felicitously closed with the quotation:

Know ye the land of the cedar and vine,
Where the flowers ever blossom, the beams ever shine,
Where the light wings of zephyrs oppressed with perfume,
Wax faint in the gardens and groves in their bloom,

Where the peach, grape and cherry are fairest of fruit,
 And the voice of loveliness never is mute.
 Where the tints of the earth and the hues of the sky,
 Though varied, in beauty may vie.
 Where the maidens are lovely as the roses they twine,
 And even the spirit of man seems divine.

Music was freely interspersed through the several sessions and the meeting throughout was interesting and profitable.

Gatherings for other purposes were found to interfere with the regular July meeting, which was therefore omitted.

The next meeting of the society was held at Grand Rapids on August 6th, 1872.

Reports were to the effect that summer apples were abundant, winter apples half a crop, peaches, plums and grapes abundant and of excellent quality.

The display of fruits and flowers was unexpectedly abundant and excellent.

The society adjourned to meet at South Haven September 3d.

Pursuant to adjournment, the society met at South Haven at one o'clock, P. M.

The afternoon was devoted to receiving reports respecting the fruit crop from various sections of the State, which were mainly favorable.

At the evening session an address on fruits and flowers, by Hon. Hezekiah G. Wells, was listened to with much interest. In the course of his address he spoke of the Ransom trap for the curculio, which at the close of his address he was asked to explain, which he accordingly did.

The relative merits of Early Crawford and Barnard peaches were discussed and a vote was taken which resulted largely in favor of the Barnard. (A few years later the vote would doubtless have been very strongly reversed.—AUTHOR.)

C. L. Whitney, of Muskegon, presented the report of the committee on flowers, which was received with enthusiasm.

During the second day's session the following was offered:

Resolved. That the name of this Society be changed so as to read, "Michigan State Pomological and Floricultural Society."

A motion was made to amend by striking out "Floricultural" and inserting "Horticultural." After further discussion the subject was tabled until the next meeting of the society.

The committee on peaches next submitted their report; after which, Mr. Brunson was asked to describe his patent trap for catching or repelling the peach grub, consisting of a collar of strong paper saturated with some substance offensive to the insect.

An address on the fruit lands of South Haven was delivered by A. J. Pierce of that place.

The committee on pears exhibited submitted their report, which was not very complimentary to the exhibit.

During the afternoon of the second day, B. Hathaway, of Cass county, explained the working of the codling moth, and described his method of trapping the larvæ, by means of a steamed wooden band wrapped around the trunk of the tree and fastened by a tack.

Asa W. Slayton, of Kent county, chairman, presented the report of the committee on apples exhibited, which was quite a spicy production, and dealt largely with errors in nomenclature.

The report of the committee on canned fruits was submitted by Chairman G. W. Dickinson, of Grand Rapids.

This was followed by an address by President Phillips of the South Haven Society, on the co-operation of kindred societies.

During the evening session E. Bradfield submitted the report of the committee on grapes. In the course of which they remark that the exhibition of Delawares is remarkable, and indicates the high rank which this delicious grape is already taking in Michigan, and especially on this lake shore.

A somewhat lengthy address was made by R. F. Johnstone, of the Michigan Farmer, on the general subject of Horticulture. The address received a vote of thanks.

Professor A. J. Cook occupied a short time in speaking of his discoveries in the line of insects, during his tour with the orchard committee.

J. Williams, of South Haven, was asked to explain his process of drying fruits; and he was followed by Secretary Dietrich with an explanation of the Alden process.

The citizens and fruit growers of South Haven and vicinity had by special effort built a large and commodious hall, which had been completed in time for this meeting. With probable reference to this circumstance, at the close of the final session Professor Cook submitted the following, which was unanimously adopted:

Resolved, That the unparalleled energy and enterprise of the people of South Haven, as evinced in this beautiful hall, their most cordial welcome, and perfect hospitality, have won our thorough regard; and that for their warm greeting and receiving us so heartily, not only to their town but to their homes, we tender them our most earnest thanks.

The Society then adjourned.

The Society held its third annual fair at Grand Rapids, in connection with that of the Northern Michigan Agricultural and Mechanical Society, on September 16th to 21st, 1872.

A new system of premiums had been provided for as indicated by the following resolution adopted by the Society at the meeting held last February:

Resolved, That the premiums offered at the next annual fair shall consist of silverware, books, magazines, and newspapers on agriculture, horticulture and pomology, chromos and such other articles as the committee may deem advisable.

This exhibition conflicted with that of the State Agricultural Society, which had fixed the State fair at the neighboring city of Kalamazoo upon the same days previously appropriated by the Northern Michigan Society.

The awards of orchard committees will be noticed in connection with the history of the counties within which they were awarded.

The fair was very successful and creditable; possibly more so on account of the rivalry with the State Agricultural Society's coincident exhibition.

The October meeting of the Pomological Society was at Grand Rapids.

I. E. Ilgenfritz, of Monroe, who had been awarded \$51 in premiums at the recent fair, donated the sum to the society.

A letter was read from W. K. Kedzie, respecting the making and publishing of meteorological observations for the use of horticulturists. Mr. S. L. Fuller regarded this as a matter of great importance. On motion of Mr. Fuller, Mr. Kedzie was chosen meteorologist for the society.

Various matters were discussed and considerable routine business transacted, when the meeting adjourned.

At the November meeting H. Holt presided, President Thompson being ill at his rooms.

There was a fine display of fruits.

Notice was given of a proposed amendment to article 2 of the constitution to be offered at the next meeting, providing for a vice-president of the society for every county in the State. Also of an amendment to the same article providing for two vice-presidents for each congressional district.

On motion of Mr. Bradfield, Messrs. Bradfield, Dietrich and Garfield were appointed a committee to frame a set of by-laws for the government of the society and of the executive committee.

The society adjourned to the date of the annual meeting, December 3d, 1872.

The annual meeting was held at Grand Rapids pursuant to the foregoing adjournment.

The proposed amendment to article 2 of the constitution being under consideration, the following substitute was offered by A. T. Linderman:

Resolved, That each county in the State be entitled to nominate one vice-president, such nomination to be subject to the satisfaction of the executive board, which nomination and satisfaction shall constitute the election of such nominee as vice-president for the current year.

No further action appears to have been taken upon this matter, and the society gave attention to a paper by D. R. Waters, of Spring Lake, on the fruit crop of Spring Lake in 1872, a copy of which was requested for publication.

T. T. Lyon moved that a standing committee on synonyms be appointed, to whom shall be referred conflicting names of fruits.

A. S. Dyckman gave the history of Hill's Chili, or Stanley's Late Peach.

The chair announced the names of the following persons as members of the committee on synonyms: T. T. Lyon, A. S. Dyckman, J. D. Boynton, and D. R. Waters.

The President then read an address on "Agriculture and its relation to Pomology."

The following persons were elected officers of the Society for the year 1873:—

President—A. S. Dyckman, of South Haven.

Secretary—J. P. Thompson, of Grand Rapids

Treasurer—S. L. Fuller, of Grand Rapids.

Executive Committee—T. T. Lyon, Plymouth; H. G. Wells, Kalamazoo; A. R. Nowlen, Benton Harbor; C. J. Dietrich, Grand Rapids; J. G. Ramsdell, Traverse City; Joseph M. Sterling, Monroe.

The resolution offered by A. T. Linderman proposing to elect a vice-president for each county was amended by adding the words "so far as is deemed necessary," when it was adopted.

Whereupon twenty-four vice-presidents were elected.

W. B. Ransom, of St. Joseph, was voted a life member of the society in consideration of his curculio trap; and the same was voted to A. T. Linderman in consideration of services as secretary.

The finances of the society being under consideration, Judge Wells suggested that the society would require the sum of \$2,500 to conduct its operations during the coming year, and added that the present members were able to control the means to raise this sum.

Efforts were at once commenced looking to the accomplishment of such result.

An address was read by J. Bougham, of the Chicago Rural Messenger, on "Marketing Fruits."

A proposed amendment of the constitution raising the fee for annual membership from \$1 to \$2 was lost.

The committee on synonyms reported that Honest John, was not recognized as legitimately belonging to any variety of peach, that Stanley's Late does not appear in Downing's work on fruits, and that Barnard is mentioned as a seedling of Yellow Alberge.

The society, by resolution, adopted the revised and enlarged edition of Downing's Fruits and Fruit Trees of America as its standard of nomenclature; also, it was resolved farther that no reproduction of a variety, without qualities so distinct as to characterize a separate identity, shall be considered as entitled to a separate name.

Resolutions were also unanimously adopted to petition the State authorities for the appointment of a State entomologist.

The apple committee reported sixty-five varieties of apples upon the tables, of which forty-five were contributed by H. E. Bidwell, of South Haven; and the remainder by Dickinson, Scott, Suttle, Holt and others.

On motion of T. T. Lyon a committee was appointed to revise the Society's present list of fruits and to prepare a full and extended list of each class of fruits, for both amateur and commercial purposes.

The society resolved to put all life membership fees into a permanent fund; the principal to be placed at interest and the proceeds only to be expended.

C. W. Garfield, from the committee on by-laws, reported a set of by-laws for the government of the society, which were adopted.

From a letter from Mr. Charles Wagener, of Penn Yan, New York, it appears that the Wagener apple originated from seed grown in Dutchess county, New York, the crop, doubtless, of 1790; that a bag of these seeds was taken from Dutchess county to Penn Yan, Yates county, in the spring of 1791, by George Wheeler, and there planted; that Abram Wagener purchased the nursery thus produced, and planted trees from it, upon his own premises,—the original Wagener being one of them. Fruit from the original tree was exhibited at the New York State fair, for premium, about 1846 or 1847; and was named for the introducer or exhibitor.

The winter of 1872 and 1873 proved to be of exceptional severity. At Yale College, New Haven, Connecticut, continuous records show it to have been the coldest in one hundred years. At the Agricultural College the lowest temperature in November was -2° on the 30th; in December, -32° , on the 24th; in January, -30° , on the 29th; and in February, -13° , on the 23d.

Professor W. K. Kedzie states that—"During the winter, including December, 1872, January and February, 1873, the thermometer at Lansing was thirty times below zero."

"The great polar storm, or wave of cold, which caused such great destruction of life and financial loss, commenced December 20th, and reached its highest point on the 24th. At Pembina the thermometer stood -30° , on the 20th; and at Fort Garry, across the British line, -42° ."

While, on December 24th the mercury stood at -32° at the college it ran down to -40° on the flats of Grand river, at Ada, and to -39° at Cascade, where President Thompson, of the Pomological Society, was staying at the

time, on observing which he is reported to have exclaimed, "Good-bye pomology and pomological fairs, peaches, pears, apples and grapes, farewell all!"

While the extreme cold of December 24th was passing over the State the lowest extreme at Ganges, Allegan county, near lake Michigan, was—15°, eight degrees lower than ever before experienced. At Saugatuck, in the valley of the Kalamazoo river, the lowest was—12° to—14°. At Spring Lake, a nearly level region, five miles from Lake Michigan, on January 28th the lowest was—19°. At South Haven the lowest during the winter was—18°, the lowest by two degrees that had occurred since the settlement of the place. At Monroe, on Lake Erie, the lowest was on December 23d,—12°, and on January 27th,—27°. The difference between Lansing, in the central portion of the State, and the immediate vicinity of Lake Michigan is thus shown to be from fourteen to nineteen degrees.

The State Pomological Society convened in the Capitol at Lansing on January 21st to 23d, 1873.

A very large and creditable display of fruits was made.

The president called for reports of fruit prospects, which were reported favorable, except in the case of peaches, which were reported to be a good deal injured except near Lake Michigan, or on elevated locations.

The society then listened to the inaugural address of President Dyckman, in which he gave a general view of the advantages of Michigan as a fruit producing State, spoke encouragingly of the prospect for a pomological exhibit at the next State fair, of the desirability of a good display of our pomological products at the Vienna exposition and also at the approaching centennial, of the necessity of the appointment of a State entomologist, and many other matters of interest.

On January 24th, 1873, the memorial asking the appointment of a State entomologist, numerously signed, accompanied by a mass of evidence showing great and general need of such appointment, was presented to the House of Representatives by Hon. H. A. Shaw, of Eaton county, but no effective action was had upon the matter by either branch of the Legislature.

This was followed by T. T. Lyon, who considered some of the difficulties and needs of the citizen, the commercial fruit grower, the amateur and the farmer, together with a consideration of the mission of the society in providing for them.

Treasurer S. L. Fuller next appealed to the audience for memberships, as the only means available to the society for securing the means to meet its expenses.

A letter was read from Judge H. H. Emmons, of Detroit, then holding a session of the United States Circuit Court at Knoxville, Tennessee, expressing sympathy with the objects of the society, and regret at his inability to be present and address the society.

A letter was read from Myron H. Norton, of Smyrna, Ionia county, eulogizing the Baldwin and Wagener apples and recommending that they occupy places at the head of the revised list.

President Abbot, of the Agricultural College, was introduced and stated that he had ordered the college teams sent down in the afternoon to take out such members of the society as would like to visit the institution, at the same time explaining some of the difficulties with which it had to contend. The invitation to visit the college was accepted.

On Wednesday evening Professor Cook read a paper on the history and

merits of the Shiawassee Beauty, which the president in his introduction stated is not a beautiful maiden with whom the professor was enamored, but a beautiful apple, native of the professor's own rich county.

Professor Beal followed with an interesting paper respecting the objects and advantages of an arboretum.

B. Hathaway, of Cass county, then proceeded to give an extended and interesting history of the codling moth, and in the course of his remarks expressed the opinion that the annual loss to the people of this State from its ravages was sufficient, if saved, to pay the entire town, county and State taxes of the commonwealth.

Along with the usual complimentary resolutions for favors, accommodations, etc., the society approved the proposition to consolidate the State Agricultural and the Northern Michigan Agricultural and Mechanical Societies, the policy of holding union fairs, and the fostering of tree culture or forestry by this society.

The committee on apples reported five hundred and forty plates of exceedingly fine apples by thirty-seven exhibitors.

The committee on seedlings reported several varieties exhibited but lacking evidence that they are actual seedlings. A seedling shown by George Parmelee, from an old Indian orchard, affords a good illustration of the health and vigor of the tree at an advanced age.

The committee on dried fruit found a collection of dried fruit, by the Aiden process, and some also by the Williams machine, and without expressing a preference for either they remark that they "differ in appearance from the ordinary house-dried fruit as faded brown differs from a lightly tinged white."

The committee on wines and ciders found specimens from a large number of persons, and say, in their report: "The specimens presented showed a great diversity of method in manufacture, as well as taste of the manufacturers, each thinking his own superior. An improvement can be made by each. Your committee would make honorable mention of the specimens that came under their observation."

The committee on grapes, pears, etc., found a fine exhibit of these fruits for so late in the season, there being six exhibits, some with, some without, name. There were also three exhibits of grapes, in fine condition. A plate of figs was also exhibited by H. E. Bidwell, of South Haven.

Peach tree buds had been brought for examination from numerous orchards, which were referred to a committee for examination, who made a record of the number of sound and injured buds of each variety in each case. A noteworthy fact was developed in the case of those from the orchard of President Dyckman, of South Haven, all of which were found to be dead and the wood very much dried. Many of them were stated to have been alive when cut from the trees; but the branches had been cut during very cold weather and brought directly into a very warm room; and had been killed, both branches and buds, by sudden thawing.

Subsequently Professor Cook exhibited and explained charts showing the divisions of natural history, followed by a brief lecture on the codling moth, accompanying it with the exhibit of a codling moth trap consisting of a band of woolen cloth tied around the trunk of the tree by a string around its middle. He also exhibited a trap for catching cut worms, which consisted of a strip of tin to be fastened around the tree by means of a tack.

Mr. Bidwell, as chairman of a committee, offered an elaborate report on the "Yellows," the reading of which was objected to by residents of Berrien county; and, out of consideration for such objections, the report was referred without having been read to a committee to report at the Battle Creek meeting, of which committee Professor Kedzie was made chairman. The general subject was discussed at considerable length by Mr. Bidwell and also by Mr. Nowlen, who gave a brief history of its appearance at Benton Harbor some seven years before.

The society adjourned *sine die* at the close of the Thursday evening session.

The February meeting convened at Battle Creek on the 25th. President Dyckman presided; and, as Secretary J. P. Thompson was ill at Lansing, C. J. Dietrich was chosen secretary *pro tem*.

Reports were almost universally discouraging so far as peaches were concerned; and even apples and pears were reported injured in some localities.

J. C. Holmes, of Detroit, read a carefully prepared paper covering the early history of horticulture in Michigan, in which there is also some reference to the old apple and pear trees along Detroit river.

Professor Cook followed with a lecture on birds and insects and their relation to fruit growing, which he illustrated with charts.

T. T. Lyon, H. P. Hanford and J. Brown were of the opinion that the borer only attacks apple trees when enfeebled or diseased by sunscald, generally on the side most exposed to the heat of the sun.

It seems probable that this difference arose from a misunderstanding, the lecturer having in mind the round headed borer (*Superda candida*, Fabr.), which is less common in most orchards, and which attacks the apple tree with little regard to its condition; while the dissenters had in mind the far more common flat headed borer (*Chrysabothris femorata*, Fabr.), which is usually, if not invariably, found where the surface is exposed to the rays of the sun during the hottest part of the day.

On Wednesday afternoon the society's meteorologist, W. K. Kedzie, read a paper which has already been referred to, respecting the polar wave of the preceding December. He closed by presenting the request of the chief signal officer for suggestions and co-operation for the purpose of extending its benefits to agriculturists by giving warnings of approaching storms, etc., and at the suggestion of the Professor a committee was appointed to prepare a memorial to Congress in favor of an appropriation for such purpose. W. K. Kedzie, T. T. Lyon and N. Chilson were appointed such committee, who submitted a draft of such memorial, which was adopted.

The report on "Yellows," which at the last meeting had been referred to a committee unread, was now submitted by the chairman, Dr. R. C. Kedzie, without recommendation; following it, however, with a statement of the importance of the whole subject and with the recommendation that a committee, to include a chemist and a microscopist, be appointed to visit the locality and make a thorough examination.

J. C. Holmes submitted a paper containing so much as is known of the Primate apple, the substance of which will appear in the history of Kalamazoo county.

On motion of J. C. Holmes a committee was ordered in accordance with the suggestion of Dr. Kedzie. The chair subsequently named J. C. Holmes,

H. G. Wells, S. O. Knapp and R. C. Kedzie as such committee, leaving the acting chemist and the microscopist to be subsequently added.

J. C. Holmes, from the committee on plants and flowers, made a complimentary report upon the exhibit.

Mrs. Jeremiah Brown, of Battle Creek, read a carefully prepared paper on "Flowers," giving lists of varieties, with descriptions and suggestions.

The president reported that arrangements with the State Agricultural Society placed the exhibit of plants and flowers at the next State fair in charge of the State Pomological Society.

Resolved, That C. J. Dietrich be authorized to collect a full assortment of evaporated fruits and vegetables and send them to the Vienna exposition under the auspices of the State Pomological Society.

The exercises of Wednesday were closed by a history of the grapes recommended by the society, which had been carefully prepared at the request of the secretary.

Thursday forenoon was devoted to an examination of various manufacturing establishments, followed by a dinner at the farm residence of ex-Mayor E. W. Pendill.

In the afternoon T. T. Lyon, chairman of the committee on lists of fruits to be recommended by the society, made a final report on behalf of the committee, adding the percentage of each in accordance with the final instructions of the society.

The advantages of orchard protection were considerably discussed, *pro* and *con*, with the usual result—a difference of opinion.

The committee on fruits reported thirteen lots of apples exhibited; also a can of Bigarreau cherries, the growth of 1867, in fine condition, together with a small collection of dried fruits.

J. D. Husted, of the committee on lists of fruits, reported a partial list especially designed for the northern and northwestern portions of the State. He followed this with a paper, setting forth the great loss suffered as the result of ignorant and injudicious selection and planting.

Jeremiah Brown, of Battle Creek, read a paper giving his experience with apples.

A fine case of wax fruits was exhibited by Mrs. A. B. Rowell.

After the adoption of the usual complimentary resolutions, the society adjourned.

On May 6th, 1873, the society met at Ada, Kent county.

More or less injury to fruit trees was reported from the severity of the past winter, but the prospect for a fair crop of most kinds of fruit, except peaches, was considered favorable.

A large and fine display of long keeping apples was exhibited, and were highly complimented by the examining committee for their freshness.

It was especially observable at this meeting that all the favorable reports of peach crops this year come from the highest altitudes, destitute of protection.

Adjourned to meet at Kalamazoo in June.

On June 28th, 1873, at a session of the State Pomological Society, held at that date at Kalamazoo, the committee on lists of fruits reported as follows:

Having, by the adoption of their recommendations accompanying their last report, been instructed to attach to the names of fruits a series of numbers indicating the proportion of each to be planted in a collection or orchard of

one hundred trees, have complied with such instruction. In the previous report the list had been but imperfectly arranged with respect to season, owing to the lack of adequate time for that purpose.

They are now, therefore, re-classified, arranging them as strictly as practicable, with reference to season of maturity.

The committee are persuaded that the usefulness of the list would be increased by attaching to certain varieties qualifying or characterizing remarks; hence they have, in certain cases, assumed the responsibility of so doing.

All of which is respectfully submitted, and the concurrence of the society asked.

(For lists see page 139 of Pom. Report for 1873.)

This was the third meeting of the society for 1873, occurring on the 25th to 27th of June.

The attendance was good throughout.

Reports showed the prospect good for a large crop of fruit except peaches, which were mainly confined to a few points near Lake Michigan.

In responding for Grand Haven Mr. Clubb read an essay on cherries.

Nursery stock at Lowell was but little injured.

The slitting of the bark of cherry trees was discussed, developing the apparent conclusion that nature has her own way of providing for increase by growth, and that it is safer to leave her to do this work in her own way.

Professor W. J. Beal gave an interesting lecture on the fertilization of flowers by insects.

On the afternoon of the second day visits were made to the residence of Dr. Chapin, to the vinery and grounds of Mrs. Dr. Wheaton, the State Asylum for the Insane, and the nursery of Bragg and Stearns.

The exhibit of fruits and flowers was excellent, as appeared very conclusively from the report of the committee.

The exercises were also enlivened by music by local talent.

I. S. Linderman reported a large loss of peach trees from the effects of last winter—saving but about two hundred trees out of over one thousand. His practice had been to raise mounds of earth around the trunks of his trees, early in the season, as a protection against the moth of the peach borer, which he removed in autumn down to the roots to facilitate the search for borers, returning the earth to a natural and proper height before winter. The winter came on last fall before the replacing of the earth, with the result already described. Others of his neighbors were similarly caught by the premature approach of winter.

Professor Cook spoke somewhat at length respecting insects injurious to strawberries, speaking especially of those already prevalent in other States, and which may be expected among us soon, mentioning the white grub, the leaf roller, the beetles, the slug, etc., illustrating his remarks by drawings.

Mr. Williams, of South Haven, introduced a model and gave an explanation of his fruit dryer.

Mr. S. L. Fuller having been compelled by the pressure of other duties to resign the office of treasurer of the society, the executive committee appointed Henry Seymour, of Grand Rapids, to fill the remainder of the term.

On the last evening a lecture was given by Professor R. C. Kedzie on the "Effect of forests upon temperature," after which the committee on resolutions reported and the meeting adjourned.

The society's orchard committee during their examinations in July, 1873,

at St. Joseph and Benton Harbor, and also at South Haven, observed frequent indications of yellows, together with more or less evidence of injury from the cold of the previous winter.

A small plantation of figs, belonging to H. E. Bidwell, had come safely through the severe winter, and was showing some fruit.

In the orchard of A. S. Dyckman, at South Haven, several trees had leaved out, blossomed and set their fruit abundantly, soon after which they died. These trees, on examination, proved to have been dead at the root, although alive at the top. This has been generally assumed to be a result of the severity of the past winter; but the matter is confessedly but imperfectly understood. Since the same circumstance occurred at Grand Traverse, where the ground was well covered with snow during the winter, and where, in fact, there had been no frost in the ground at any time.

The orchardists of South Haven have adopted the practice of destroying all peach trees manifesting yellows, by which means they are able to keep the disease within comparatively narrow limits. No yellows was discovered by this committee north of the vicinity of South Haven.

On September 5th, 1873, the State Pomological Society again met at South Haven upon the invitation of the South Haven Pomological Society.

President Dyckman, being a resident here, was busy with the gathering, packing and shipment of his ripening peach crop, and unable to be present. The meeting was therefore called to order by one of the vice presidents.

Notwithstanding the earliness of the season and the general scarcity, the show was exceedingly fine in all departments. The attendance from abroad was also unexpectedly large.

Among the exhibits was a basket of grapes, together with specimens of peaches and pears from California. There were also some very fine peaches exhibited by Judge Ramsdell, of Traverse City.

The resignation of W. K. Kedzie, meteorologist of the society, was accepted, he having been elected to the chair of chemistry in the Agricultural College of Kansas.

A new codling moth trap was exhibited, consisting of a strip of brown paper tied about the trunk of the tree with a string. This was punctured by birds who discovered the location of the larvæ beneath, and relieved the orchardist of the necessity to remove and examine the traps.

Replying to a question, President Phillips, of the South Haven Society, stated that, notwithstanding the severe winter, the shipments of peaches, within a radius of five miles from South Haven, would exceed thirty thousand baskets; fully one-third of which would be from the orchard of A. S. Dyckman. He also stated that there were plenty of as good lands as any now under cultivation, and within one and a half miles of the village, open to purchase at from \$25 per acre for unimproved lands to \$300 for lands improved and under orchards.

At the evening session a paper was read by T. T. Lyon, of Plymouth, on "The importance of timber protection for fruit culture."

Treasurer H. Seymour followed with a short statement of the financial condition of the society.

Mr. Law, of South Haven, addressed the audience upon the religion of fruits and flowers, which closed the evening exercises.

Considerable quantities of fruits, flowers and vegetables were added to the exhibit on the second day; also specimens of yarn from Jamaica, with cocoa

nuts, bamboo and specimens of the utensils used by the islanders. A large variety of fruit packages was also exhibited. Among other things a fig tree was shown bearing its second crop of this year's fruit.

The several committees found abundant material for their reports, but since they contained nothing unusual they are omitted.

A seedling crab apple, originated by John Byers, and exhibited by A. A. Olds was thought worthy of a name and was christened Byer's Beauty.

An essay on the "Habits and Food of the Birds of this Region" was read by L. H. Bailey, jr., of South Haven.

This was followed by an essay on the "Effects of Fruit upon the Human Economy."

On assembling on Friday morning, H. E. Bidwell reported that news had just arrived to the effect that the first prize for dried fruit had been awarded to the Williams Evaporating Company, of South Haven, by the Vienna exposition.

J. M. Sterling, of Monroe, exhibited specimens of an aquatic plant called lotus, indigenous in the shallow waters at the mouth of the Raisin, below Monroe, and which was by some persons supposed to be the sacred lotus of Egypt, but which is, in fact, the *nelumbium luteum* or water chinquapin, a rather rare plant, which occurs also in La Plaisance bay, and in Sandusky bay, in Ohio, as well as in the Schuylkill river, near Philadelphia, and a few other places at the east.

Hon. John Whittlesey, of St. Joseph, was chosen to represent the State at a meeting of the commissioners of horticulture to confer respecting the proper representation of this interest at the approaching Centennial exposition.

Whereupon the society adjourned.

The fourth annual fair of the State Pomological Society was held at Grand Rapids jointly with that of the State Agricultural Society, on September 15th to 19th, 1873.

Visitors at Pomological Hall were very generally surprised at the great variety and high quality of the fruits exhibited. The society's rules have, since the last year's fair, been so modified as to discourage the extensive duplication of showy but indifferent varieties, and also to encourage correct nomenclature by exhibitors, instead of relying on the naming of their fruits by the committee on nomenclature.

The first premium for a county collection of fruits was awarded to Van Buren county, the second to Grand Traverse, and the third to Wayne, for the reason that the first two contained peaches and plums, while these were not included in the last, although it was far superior so far as apples alone were concerned. This circumstance led Judge Ramsdell, chairman, of the awarding committee to recommend that thereafter the offers be so arranged that apples shall compete with apples, pears with pears, grapes with grapes, peaches with peaches, etc.

In all, thirty-four hundred plates of fruit were exhibited, while the plants and flowers occupied the central portion of the hall.

The State Pomological Society held its October meeting at Traverse City, on the 8th to 10th of that month, on the invitation of the Grand Traverse Union Agricultural Society and on the occasion of its annual fair.

Fruit was the prominent feature of the exhibition, and so late a date for the fair was necessary to its display in its most perfect condition.

Secretary Thompson thus characterized the display: "Never before was there such a display in northern Michigan. Fruit is the great feature of the show. It eclipsed all departments, though the vegetables crowd closely the fruit. But the October sun has done well its work. Such coloring is only the work of the Master's pencil. There is no mistake about the paint on these apples, peaches, plums, grapes and flowers. The sight is a truly magnificent one, and we congratulate all concerned upon their really fine show of fruit. The pioneers may well feel proud of their work. Ten years ago the modern varieties of fruit were scarcely known here, now the catalogue is full and overflowing. This exhibition stamps the Traverse country, meaning thereby the counties bordering on Traverse bay, as a great apple country. The apple, the king of fruits, has here found its home, a congenial clime."

For so new a region the exhibit, especially of fruits, is very extensive, varied and excellent, and there appears to be no way to more effectively characterize it than by quoting the committee's report, as follows:

Best peck of Twenty Ounce apples, Jas. Lee; best peck of Baldwin, J. Lee; best peck of Northern Spy, J. Pulcifer; best peck of Rhode Island Greening, Roxbury Russet, Talman Sweet, Maiden's Blush, Golden Russet, H. W. Curtis; Chenango, L. W. Case.

Best plate of Northern Spy, J. Pulcifer.

Best collection of fruit grown by one exhibitor, variety, quality and succession considered, Jas. Lee 1st, W. Mebert 2d.

Best peaches, A. K. Montague.

Best seedling apples, O. S. Francis.

Best plate of grapes, J. E. Savage.

Best plate of quinces, A. K. Montague.

Best collection of canned fruits, Mrs. T. T. Bates.

Your committee would respectfully mention the fine collection of fruit exhibited by Hon. Perry Hannah; also the collections of Messrs. Curtis, Lancaster, Fife, Miller, Dunlap and others. We also mention fine seedling peaches, raised by Messrs. Dunlap, Lee and Hurlbut. There were represented in individual collections of apples sixty-two varieties, besides many not named; also many fine pears, plums, peaches, and Siberian crabs, not entered for premiums.

W. Mebert, H. O. Mack, L. R. Smith, T. A. Ferguson, N. R. Haight, committee.

The undersigned, committee on county and township collections of fruits, respectfully report as follows:

They find collections on exhibition from Grand Traverse and Benzie counties.

From Grand Traverse they find a collection embracing ninety-two varieties of apples, eleven of pears, seventeen of peaches, seven of plums, six of grapes, one of quinces, two of cranberries and one of butternuts.

From Benzie county the collection embraced forty-eight varieties of apples, nine of pears, eight of peaches, twelve of plums, four of grapes, seven of raspberries, one of currants and two of strawberries; the last three artificially preserved.

These two collections compete very evenly, so far as the quality of the specimens are concerned; and, moreover, they both include the great mass of our best known and most desirable varieties, so that the real difference in the value of the two (made up as such difference is, in the main, of

varieties of little comparative value,) is really less than would at first sight appear. Still your committee were fully convinced that the collection from Grand Traverse county is, at least, as well grown as the competing collection; and hence, in consideration of this, and also of the greater number of varieties, they award the premium to Grand Traverse county, represented by George Parmelee, of Old Mission. In doing this, they are so impressed with the high quality of the Benzie county collection, as well as with the energy and enthusiasm displayed in bringing it together and placing it upon exhibition, that they take occasion to suggest that if the financial condition of the society shall so warrant, it may be considered well worthy of a second or discretionary premium.

The collection from Leelanaw seems to have been entered both as a county and a township collection. Those in charge, however, have chosen to compete for the township premium only, under the impression that the rules of the society do not permit the same collection to compete in both classes. This collection embraces fifty-six varieties of apples, eleven of pears, ten of peaches, fifteen of plums, seven of grapes, and three of currants in the fresh or natural state.

A collection is also shown from the town of Peninsula, embracing one hundred and seventeen varieties of apples, twenty of pears, twenty-five of peaches, seven of plums and seven of grapes.

Your committee find the same close competition between these collections that has been spoken of in connection with those from counties, and, in awarding the premium, as they do, to the town of Peninsula, they, for a similar reason suggest to the society the propriety of awarding a second premium to the Leelanaw collection.

In submitting this report, your committee are impelled to express their high gratification at the great beauty and very high quality of the fruit exhibited, and would also indulge the statement of what is to them a very gratifying fact, that they have seldom, if ever, either in local or State exhibitions, found fewer errors in the naming of the fruits exhibited.

T. T. LYON,
S. O. KNAPP,
A. T. LINDERMAN,
J. P. THOMPSON,

Committee.

On December 2d, 1873, the State Pomological Society convened at Battle Creek.

The secretary submitted a letter from P. Barry, of Rochester, New York, suggesting the appointment of a committee from this State to secure a representation of its horticultural products at the approaching Centennial exposition.

Governor J. J. Bagley was appointed to designate the committee for Michigan, and accepted the duty.

Paw Paw or Rubicon apple and Snow's Orange peach were discussed at considerable length. Their history will be given in connection with that of Van Buren county.

Notice having been given at a previous meeting, C. W. Garfield called up the proposal to so amend the constitution and by-laws as to provide for the election of but two members of the executive committee each year and lengthening their term of office to three years.

The proposed amendments were discussed and adopted.

A letter was also submitted from Judge Ramsdell, of Traverse City, suggesting an arrangement with the State Agricultural Society to give the society charge of its fruit exhibit; also proposing the holding of one or more other exhibitions, with an admission fee, and other particulars respecting an apple exhibit, and the renewal of the previous memorial to the Legislature for the appointment of a State entomologist.

A letter was also received proposing reciprocation and coöperation on the part of the Kent Scientific Institute.

The society listened to the annual address of the president, after which a discussion was had on grapes and strawberries.

On Wednesday morning the report of the secretary was received.

An invitation was also received and accepted to visit and dine at the Health Institute (more recently known as the sanitarium), which invitation was accepted.

In the afternoon the annual election of officers resulted in the choice of the following persons:

President—A. S. Dyckman, South Haven.

Secretary—J. P. Thompson, Grand Rapids.

Treasurer—Henry Seymour, Grand Rapids.

Executive Committee—J. C. Holmes, Detroit; W. W. Tracy, Old Mission, for one year; George W. Bruchner, Monroe; S. O. Knapp, Jackson, for two years; N. Chilson, Battle Creek, A. J. Cook, Lansing, for three years.

A list of thirty-one vice-presidents was also elected, and T. T. Lyon, of Plymouth, was appointed delegate to the Ohio Horticultural Society.

At the evening session Henry Fralick, S. L. Fuller, A. S. Dyckman and J. P. Thompson were appointed to confer and arrange with the State Agricultural Society a plan for a union fair, the horticultural department to be managed by the Pomological Society.

Rev. Richmond Fisk, Jr., D. D., of Grand Rapids, repeated before the society his lecture on Colorado, illustrated by a map and diagrams, which proved highly interesting.

Professor A. J. Cook also gave a detailed account of the peach borer, its mode of operation, its results and the mode of attacking and destroying it.

The next forenoon was devoted to visiting the public schools upon the invitation of the school board.

The afternoon was mainly consumed in a discussion of the codling moth. Giving hogs the run of the orchard, and the using of cloth or paper bands were both considered. Professor Cook thought both desirable and remarked that the bands need not be examined before the 1st of July. Mr. Gregory had found larvæ under his bands as late as the 6th of November.

George Taylor submitted the report of the committee on plants and flowers, the entire collection of which was from the Chilson Brothers, of Battle Creek.

The report was highly commendatory.

The final evening was mainly taken up with the reports of committees. The committee on apples and small fruits reported over ninety varieties of apples, upon the tables, and awarded the first premium to Parmelee and Adams for a collection from Grand Traverse and Benzie counties, and the second to J. E. Robinson, of Battle Creek. Exhibits were also noticed from N. & C. Chilson, E. Bucl, N. Crane, H. Dale Adams, N. E. Smith, Charles Merritt, J. R. Gregory, A. Little and J. R. Rencher.

"In Mr. Lyon's collection we found the largest Red Canadas we ever saw." A seedling from C. W. Whitney, Macomb county, but shown by C. L. Whitney, of Muskegon, is very fine.

The committee on grapes, pears and preserved peaches, together with dried fruits and vegetables, including drying apparatus, also made a commendatory report.

A sharp discussion occurred upon the question of a change of the title of the society to Horticultural or Floricultural. An informal vote of the society was strongly opposed to the change.

Notice of a proposal to change the name of the society was again given.

At nine o'clock P. M. the society adjourned.

From this time forward the State Pomological Society abandoned the holding of monthly meetings, limiting the number to four each year—a winter meeting in January or February, a June meeting in the season of strawberries, the annual fair in September and the annual meeting for the election of officers in December.

In pursuance of this arrangement, the next meeting occurred at Adrian on June 23d, 1874, the winter meeting having apparently been omitted.

The opening address of President Dyckman was devoted to the peaches of the Michigan peach belt, which commences as follows: "When, about the end of the last half century, Eleazur Morton, George Parmelee and Curtis Boughton, the pioneers of St. Joseph peach culture, set their respective orchards—an aggregate area of about twenty-five acres—people opened their eyes in amazement at this exhibition of lunacy, thinking the product of such large orchards would overstock the market. Now, with their estimated six hundred thousand peach trees in that region, in 1872, besides extensive orchard interests at South Haven, Saugatuck, Holland, Grand Haven, Spring Lake and other points north along the shore, our western Michigan fruit growers are relieved of the charge of lunacy."

The address is devoted to the description of a few of the more popular market varieties, with their history, followed by a description of his mode of cultivation, pruning and subduing injurious insects, some particulars of which his theories and practice do not altogether accord with those of some of his equally successful neighbors. Near the close he remarks: "As to the yellows, that inscrutable dread of the peach grower, we refer to the able report of our committee, with only this admonition, that with an ax, spade and fire, the most radical treatment brings the greatest safety"—a conclusion in which he will doubtless be heartily sustained by experienced peach growers generally in this State.

John J. Thomas, of Union Springs, New York, followed with a very practical address on "Horticulture for the People," in the course of which he remarks: "He who can devote a few acres may place upon his table, every day in the whole year, a supply of wholesome, delicious and refreshing fruit," which he sustains by indicating of what the requisite succession may be made to consist.

Of nurseries he says: "A little over thirty years ago, visiting a nursery at Rochester, New York, then occupying six acres in all—or rather it was expected to occupy six acres when all planted—two laborers were hired to do the digging and hoeing, and the two young and industrious proprietors did the pruning, budding and grafting."

"About thirty-five years ago a New England nurseryman, as he informed

me, had occupied one whole acre with nursery fruit trees, and he had the boldness and enterprise to add two acres more. His neighbors held up their hands in astonishment, exclaiming, 'Where will you find market for all these trees?' He did, however, find a market for them, and some nurserymen besides have done the same; for in less than twenty years from this date, Ellwanger & Barry, of Rochester, had increased their nursery of six acres, in 1839, to more than four hundred acres, in 1858; and other nurseries in the eastern, middle and western States had become extended to hundreds of acres each," adding: "There are now (1874), in the United States, more than ten thousand acres actually under compact nursery growth, of which Rochester and Geneva occupy more than one-half, perhaps more than two-thirds."

In 1841, at the New York State fair, held at Syracuse, the man who took the first prize carried his entire collection from the cars to the exhibition in a willow basket; while at the last (1873) exhibition of the Americal Pomological Society at Boston, two vast halls were crowded with specimens, and seven barrels of specimens, from a western State, in which the first fruit had not yet been planted sixteen years before, were unable to find space.

After treating various other branches of the subject the address concluded by congratulating Michigan as the possessor of the finest horticultural field in the entire Union; and also in possessing an agricultural college that has long stood in the front rank of similar institutions.

Professor Cook followed with a lecture on insects injurious to house plants and shrubbery, in which was included the best known remedies for their destruction.

Following the above, Professor W. J. Beal gave some notes on the structure and growth of the flowers and fruit of the apple; the distinctive features of flowers and seeds; the use which can be made of them in describing apples.

The lecture developed many hitherto little known facts respecting the distinguishing peculiarities of both flowers and fruits, which are well worth the attentive study of pomological students.

A paper on grape culture was also contributed by A. Sigler, of Adrian, drawn, no doubt, largely from his personal experience with both foreign and native varieties.

This was followed by J. W. Helme, president of the Adrian Horticultural Society, with a paper on the honey locust (*Gleditschia triacanthus*), as a hedge plant, which he preferred on account of its hardness, it being indigenous in Michigan; and also on account of its thorny character.

In September, 14th to 19th, 1874, the State Pomological Society held its annual exhibit of fruits, flowers and plants jointly with the fair of the State Agricultural Society, at East Saginaw.

The flower and plant exhibits came largely from the Saginaw valley, although some premiums went to Kent and Ottawa. To James Vick, from whom a part of the exhibit came, was awarded a life membership. An exhibit from John Ford was the only contribution from Detroit.

Monroe has excellent railroad connection with Saginaw and proved to be the banner county so far as fruit exhibits are concerned, although Oceana bore the palm for plums. The largest amount of money awards for fruit went to John Gilbert, of Ovid, Clinton county.

Taken as a whole, the horticultural exhibit was excellent. The vegetable exhibit was unusually so, and being almost wholly the product of Saginaw valley was one of which the region has reason to be proud.

In his report as chairman of the committee on nomenclature, George Parmelee remarks: "In the names of apples, the most common of fruits, we found most confusion. Here, as at other fairs, the fact was perfectly patent that worthless varieties are grown all over the State. Our society, has, at various times, raised its voice against the careless selection of varieties, but men plant trees who never heard of this society, and many more there are who never read a report of its meetings. Of what use is our combined experience? Our members will, to a great extent, correct this evil in their own planting, but we see the need of extending our membership and influence."

The society held a meeting at Spring Lake, Ottawa county, on the 6th of October, 1874, with a fair attendance and a very good show of fruit.

Reports stated that, this season, two banks, one at St. Joseph and one at Benton Harbor, had paid out to fruit growers \$200,000. Reports of a more or less encouraging character were made from Manistee, Spring Lake, Grand Haven, Peach Plains, Ionia, Cascade, Kalamazoo, Muskegon, Grand Traverse, and other localities.

The next meeting of the society was its annual meeting, which occurred at Ionia, on December 2d, 1874, upon the invitation of the Ionia County Agricultural Society.

The matter of arranging for the exhibition from this State at the Centennial was taken up and a committee of arrangements appointed, consisting of C. L. Whitney, of Muskegon, Secretary J. P. Thompson, T. T. Lyon, S. O. Knapp, J. C. Holmes, and Perry Hannah.

A committee, with George Parmelee as chairman, recommended Early Richmond, English Morello, Reine Hortense, Mayduke and Belle Magnifique as hardy cherries, also for favorable localities, Early Purple, Elton, Bigarrean, Rockport, Black Eagle, Knight's Early and Black Tartarian.

"Air, the Source of Fertilization of Plants," was the subject of an interesting address during the first evening by George Parmelee.

The death of George Gridley, one of the members of the society, was announced, and a committee named to draft appropriate resolutions.

Professor W. J. Beal delivered a lecture on how plants grow, a large delegation from the public schools being in attendance.

Professor Cook followed with a lecture on the codling moth. Both lectures were illustrated by blackboard drawings.

There were three hundred and twenty plates of fruit on exhibition, Grand Traverse being especially well represented. There was also a small exhibit of flowers.

A learned and valuable paper was read by Charles F. Wheeler, of Hubbardston, on "Random Botanical Notes, Historical and Otherwise," in which, among other particulars, he gave a sketch of the work done in investigating and cataloguing the plants of Michigan. Among those who have contributed to aid in this work he named Drs. Douglass Houghton and Zina Pitcher, Dr. John Riddle, of Ohio, Dr. John Wright, Dr. Abram Sager, Professor George P. Williams, Miss Mary H. Clark, W. D. Whitney, Professor N. H. Winchell, J. B. Steere. He pleaded for the cultivation of native shade and ornamental trees as being in many respects better than the foreign ones introduced for that purpose.

In conclusion, he made an urgent plea for a more general and thorough study of botany in general, and of the native plants of Michigan in particular.

On Wednesday evening the first business was the election of officers for the ensuing year, but after more than an hour spent in a vain effort to elect a president the election was postponed.

Hon. Alonzo Sessions then delivered a brief address on the subject of wheat culture in Ionia county.

J. C. Holmes, of Detroit, on behalf of the committee on the Centennial Exhibition, reported the following:

Resolved, That the Michigan State Pomological Society deems it expedient to exhibit horticultural products at the Centennial Exhibition, to be held in Philadelphia, in 1876, provided a sufficient amount of funds can be raised to meet the necessary expenses.

Resolved, That the society extend an invitation to local horticultural societies to co-operate with it.

J. C. Holmes read a historical sketch of the organization of agricultural societies in Michigan.

The meeting appointed H. Dale Adams, S. O. Knapp and George W. Webber a committee to confer with the State Agricultural Society relative to holding a union fair in September, 1875.

On Thursday morning the society proceeded to the election, deferred from yesterday, when the following persons were elected:—

President—George Parmelee, Old Mission.

Vice-presidents—One from each county.

Secretary—J. P. Thompson, Grand Rapids.

Treasurer—Henry Seymour, Grand Rapids.

Members of Executive Committee—W. L. Webber, East Saginaw; D. R. Waters, Spring Lake.

The following were chosen delegates to the meeting of the Western New York Horticultural Society, at Rochester, on January 10th, 1875, viz: J. C. Holmes, T. T. Lyon, C. P. Avery, H. P. Hanford, A. S. Dyckman.

J. C. Holmes presented an invitation from the State Poultry Society to join them in their January exhibition at Detroit, but the invitation was not accepted.

On behalf of the people of Lansing, Professor Beal invited the society to hold its February meeting in that city. The invitation was accepted.

Mr. Bradfield moved to amend the constitution so as to require all officers to become members of the society. The motion was laid on the table under the rule.

Hon. J. Webster Childs, of Ypsilanti, gave an address on "The Agricultural Wants of Michigan."

Following which was a paper by T. T. Lyon on "Plums and Plum Culture," and one by H. S. Clubb, on the "Characteristics of the East Shore of Lake Michigan."

The usual complimentary resolutions were adopted.

The committee on apples exhibited, thought nearly all worthy of premiums, and especially commended the Grand Traverse Club and N. E. Smith, of Ionia.

The committee on grapes, pears and wines reported a good exhibit in these classes and also in dried fruits.

After a very interesting and useful meeting the society adjourned. A Northwestern Fruit Growers' Distributing Association was organized at Chicago on January 5th, 1875, which, although not strictly a Michigan organization, was expected to include a large membership in this State.

Its object, as stated in article second of its constitution, "was to collect all possible information pertaining to the sale of fruit in the Northwest, and publish it in some suitable form for distribution to the members to enable them to more readily reach a market for the product of their farms and gardens, and to make any other regulation regarding the sale of fruit deemed necessary and advisable by the association."

A constitution was adopted and a set of general and special rules; also a Fruit Board of Trade, or Guild. It also proposed similar guilds in all the principal towns of the Northwest.

Nothing seems to have been effected by such organization, which, apparently, was soon abandoned.

On February 9th, 1875, the State Pomological Society met at Lansing. The sessions occupied three days.

The sessions and the exhibit of fruit were held in the old library room of the Capitol, and the display of fruit was very creditable.

The starring of the catalogue of the American Pomological Society for Michigan not giving a proper indication of the success of varieties of fruit in our State, T. T. Lyon, George Parmelee and H. Dale Adams were appointed a committee to prepare and submit to the proper authorities of that society such amendments as they shall deem needful.

The present severe weather seems to have brought out the following remarks by Secretary Thompson, who referred to the cold winter of 1872-3, which was expected to destroy all the fruit and many other crops; yet the products of 1873 were among the most satisfactory ever turned out in Michigan; and the fruit and vegetable crops yielded nearly \$4,000,000. He also stated the number of acres of land in the State devoted to fruit culture to be 241,048 acres, valued at \$25,000,000.

The merits of various market apples being under discussion, E. Buell, of Kalamazoo, preferred Red Canada, while others preferred Northern Spy.

In the evening Professor A. J. Cook addressed the audience on "Economic Entomology," urging its great importance to tillers of the soil in affording information as to the best modes of suppressing insect enemies.

A. G. Gulley, of Dearborn, gave a short paper on "Where to buy our Trees," counseling to avoid agents and giving preference to home grown stock, and to make purchases in person, as far as practicable.

C. W. Garfield, of Grand Rapids, followed with an address on "How to Beautify Homes," confining his remarks mainly to floral decorations, and treating somewhat upon the domain of taste, respecting which people may be expected to differ. Cut flowers were used to some extent to illustrate his ideas.

The weather becoming less severe on Wednesday morning, the attendance as well as the exhibit of fruits was considerably increased.

A. S. Dyckman read a paper on "Pruning Peach Trees" in which he took issue with Mr. A. J. Downing's process of "shortening in," claiming that it occasioned too dense a head, caused mildew, etc. His main idea in pruning is thinning.

D. R. Waters, of Spring Lake, followed with a paper on the same subject, taking the opposite position, in accord with Downing, Thomas and others.

In the course of the subsequent discussion it was explained that the shortening in practice is based upon two facts, the one being the strong tendency of the peach tree to push its principal growths from the longest and strongest shoots, and the other that neither foliage nor fruit is ever produced from buds more than one year old, and hence that the failure of a shoot to make

additional growth during the season insures its death. The shortening of the strong shoots, therefore, diverts growth to the weaker ones, thus continuing their existence. It appeared that Mr. Dyckman at one time attempted shortening in, but found that his trees became filled with an excess of young wood, more or less of which was necessarily cut away. He therefore abandoned shortening in with the usual result that his trees ultimately became too open and the branches bare of foliage and fruit except at the tips, a difficulty which he would remedy by occasionally cutting back the main branches to the proper length to grow a new head of young wood.

From the facts elicited during the discussion of the subject, the suspicion was expressed that Mr. Dyckman may have shortened his trees too severely, and, observing the excessive central growth, may have gone to the opposite extreme, instead of shortening more moderately till he reached a proper medium.

The thinning of fruit was incidentally considered in connection with this discussion, and shortening in was held to assist, to a considerable extent, in reducing the labor of thinning the fruit.

F. A. Gulley, of Dearborn, who had been a student at the Agricultural College, read a paper on "The Manufacture and Application of Manures." The paper was listened to with much interest.

An invitation was accepted to visit the Agricultural College.

On the afternoon of Wednesday T. T. Lyon contributed a paper on "New Varieties," in which were given descriptions of new and promising fruits.

Professor W. J. Beal followed with a lecture on "Pruning Apple Trees," criticising the manner in which much pruning is done, and stating the proper time for doing the work and the objects to be gained.

"Neatness and Order" was the title of a paper read by James Satterlee, of Greenville.

An invitation was received from the Monroe County Agricultural Society to hold the June meeting at Monroe, which was referred to the executive committee, and by them accepted.

On Wednesday evening, although the weather was very severe, a highly intelligent audience listened to an eloquent address by President Abbot, of the Agricultural College, on "The Necessity of Agricultural Education."

Also to one from Hon. Rowland E. Trowbridge, of Lansing, on "Organization Among Farmers."

Hon. W. L. Webber, of East Saginaw, closed the evening exercises with a paper on "The Destiny of Northern Michigan."

On Thursday a memorial was adopted asking the Legislature for an appropriation to aid the society to make an exhibition of fruit at the meeting of the American Pomological Society, at Chicago, in September.

Professor R. F. Kedzie, meteorologist of the society, presented a paper on "Meteorology," and on his motion a resolution was adopted requesting our State Legislature to use its influence with Congress to have the Signal Service adopted to aid the agriculturists of this State.

The society commended a draft of a bill for a law for the eradication of "Yellows" as suitable to be enacted into a law.

The committee on fruits exhibited reported sixty-five varieties of apples, besides many duplicates; also some well preserved grapes.

After the adoption of the customary resolutions the society adjourned. The railroads, however, had become so blocked up with snow that a portion of the members were unable to return home for a day or two.

The summer meeting of the State Pomological Society, which convened at Monroe, on Tuesday, June 29th, 1875, was an exceedingly interesting and profitable one.

The secretary called attention to the duties devolving upon the society in the near future.

In connection with the meeting of the American Pomological Society, the Illinois Horticultural Society, at Chicago, had arranged for the fruit exhibit to be made in the Inter-state Exposition building, and a circular from O. B. Galusha, secretary of the Illinois society, was received by Secretary Thompson, from which the following is an extract:—

“Seven thousand square feet of space in the south end of the main floor and gallery of the great exposition building will be assigned to the various States, territories and provinces, and, in the space assigned to each will be arranged the State, county, society or individual collections contributed therefrom. It will be our effort to have every section of the country, from Nova Scotia to California, and from Key West to Oregon, suitably represented in a truly continental exhibition of fruits, and, to this end, we solicit your personal effort and influence to secure a complete representation of your fruit products. Upon the same day and in the same building, the great Inter-State Exposition of the Arts and Industries will begin its four weeks' exhibition. Free tickets, admitting them to all parts of the exhibition, will be issued to all members of the American Pomological Society, and to contributors of fruits for the exhibition. Railroads will give reduced rates.”

The meeting was also informed that Governor Bagley would appoint a committee of three to take charge of the fruits for this exhibition, and also a committee of thirteen, to be selected from the several fruit growing districts of Michigan, to collect the fruits.

With regard to the Centennial Exposition, to occur at Philadelphia the following year, the Legislature had appropriated \$7,500, and placed it at the Governor's disposal for the purpose of securing an exhibit of our various State products and interests on that occasion. A commission of four members will be appointed soon, and circulars will be issued stating general regulations, and supplying information to exhibitors.

Owing to the severity of the past winter, reports of fruit prospects were of more than usual interest.

Judge Ramsdell, of Traverse City, reported apples on high, rolling land but little injured and bearing a fair crop. On lower and highly cultivated lands badly injured and without fruit. Peach trees badly injured and without fruit, save in favorable localities; his plum orchard of seven hundred and fifty trees uninjured and bearing a full crop. The same is true of pears, and also of sweet cherries. Nectarines badly damaged; apricots uninjured; grapes uninjured and fruiting heavily.

At the Agricultural College Professor Beal reported at one time —33°. He had never seen so few fruit blossoms.

Mr. Spalding, of Monroe, reported no injury to grapes, which were bearing even better than the previous year.

Mr. Sterling reported apples at Monroe a medium crop.

Mr. Suttle, of Grand Rapids, reported a number of peach orchards in Kent county badly damaged; the apple crop a failure; grapes occasionally damaged by a late spring frost. Secretary Thompson remarked that the fruit growers of the Grand River Valley were now engaged in holding *post mortem* examinations of their orchards.

Mr. Waters, of Spring Lake, reported that there would be no peaches at that place, above the snow line. Grapes about two-thirds of a crop. Baldwin and Rhode Island Greening apples had suffered most.

After a very cordial welcoming address by Mayor Redfield, he introduced Governor Bagley, who made some very pleasant remarks as to the general status of those engaged in horticulture.

President Parmelee responded to these addresses and then introduced a paper from Dr. Edward Dorsch, of Monroe, on "Our Friends, the Mole, the Toad, the Spider and the Owl," which was read by Professor Boyd.

On Wednesday morning many were absent visiting the vineyards and orchards of George Bruckner, on Lotu Island.

T. T. Lyon, chairman of the committee on the Chicago exhibition, reported the appointment of a committee of thirteen collectors of fruits and the arrangements made for the purpose.

T. T. Lyon tendered his resignation as chairman of the society's committee to report to the American Pomological Society a revision of the starring of the Michigan column of that society's catalogue, stating that A. T. Linderman was the recognized member of that society's general fruit committee for Michigan; and, as such, properly charged with this duty; and it seemed better that the State society should yield in the interest of harmony. The resignation was not accepted and the committee were instructed to proceed with their work.

Professor Beal delivered an illustrated lecture on "Fungoid Growths," taking the position that fungi are not necessarily an indication of disease, but that they sometimes appear upon living organisms, either animal or vegetable, where there had been no previous disease.

Professor Cook, on the afternoon of Wednesday, delivered a lecture on the "Phylloxera," the parasite that has so sadly injured the vineyards of France, having been introduced there from America. He stated that the insect exists in one form upon the leaf and in a different form upon the root, of both of which he exhibited specimens.

The society took a recess till evening to allow a visit by the members to the nurseries of I. E. Ilgenfritz & Co. and Reynolds, Lewis & Co., adjacent to the city.

Wednesday evening, the Rev. Dr. Mattoon, of Monroe, gave a short humorous and eloquent address on "Pomology, in the Line of Civilization," after which President Parmelee read a paper on "The Connection of Pomology with Meteorology."

Hon. Edwin Willits closed the evening with a very interesting and finely written "History of the Old Pear Trees of Monroe." This paper will be largely quoted in the history of Monroe county.

On Thursday an amendment to the constitution was proposed, providing for the election of officers at the annual State fair. Under the society's rules the question was laid over till the next regular meeting.

A discussion of the English sparrow developed a wide difference of opinion as to its granivorous and frugivorous habits. George S. Cowan introduced them at Monroe, with the aid of contributions from E. S. Sill and J. M. Sterling, who was induced to send for them by the action of the society. He was a little surprised to see the society "go back" on the sparrow.

Among the visitors present from other States were Secretary M. B. Bateham, of the Ohio Horticultural Society, with Col. D. C. Richmond, Leo Welz and G. F. Newton, of its executive committee, and Addison Kelley, of

Kelley's Island. Messrs. Welz and Bateham gave their testimony against the sparrow, while Mr. Newton spoke in his favor.

Mr. Bateham gave a minute description of what is known as the Cape Fruit House, a building so constructed as to keep fruit at a very low and equable temperature without the use of ice or other refrigerating material for the purpose of retarding the ripening process till it can be profitably placed upon the market.

Professor Cook gave a short talk about currant worms, rose slugs, cut-worms, peach borers, etc., with the most convenient and satisfactory means of destroying them.

The exhibits of plants and flowers, of wines and of fruits were excellent as reported by the several committees.

R. F. Johnstone, chairman of the committee on resolutions, reported very felicitously, and after adopting the same the society adjourned, a part to witness a review of the River Raisin Navy and others to visit the Pointe de Peau vineyards.

The American Pomological Society held its fifteenth session at Chicago on the 8th to 10th of September, 1875.

The following persons appointed jointly by the Governor of the State and the State Pomological Society were in attendance as delegates: T. T. Lyon, South Haven; J. M. Sterling, Monroe; J. G. Ramsdell, Traverse City; I. E. Ilgenfritz, Monroe; E. H. Reynolds, Monroe; W. J. Beal, Lansing; H. E. Bidwell, South Haven; Edward Bradfield, Ada; H. Dale Adams, Kalamazoo; P. C. Davis, Kalamazoo.

The meeting was called here upon the invitation of the Illinois Horticultural Society, and its President, Dr. E. S. Hull, of Alton, who, within a few short weeks, was to lay off the robes of office and take the final journey through the dark valley, welcomed the society to the prairie State in a few well chosen words.

The attendance from abroad was large. The sessions were held at the Grand Pacific Hotel and the exhibition of fruits at the Inter-State Exposition, where a general exposition was at the same time in progress, to which all members of the American Pomological Society, as well as exhibitors of fruits, were allowed free admission.

The committee on fruits exhibited report: "That they have found a very large and varied exhibition of fruits from twenty-two States and provinces of North America and embracing the whole range of fruits generally cultivated—from the hardy apples of the extreme north to the semi-tropical fruits of the gulf coast. The exhibition, as a whole, is much larger than any heretofore made by this society, reaching the great number of five thousand eight hundred and seventy-five plates of fruit, according to the lists furnished to your committee. This would make a single row of plates nearly a mile in length and far surpasses, as we believe, any similar exhibition heretofore made on this continent. There were three thousand five hundred dishes of apples, eighteen hundred of pears, forty-eight of peaches (besides large quantities in baskets in duplicate), one hundred and fifty-four of plums, two hundred and thirty-seven of grapes, thirteen of raspberries, four of blackberries, nine of currants, one of strawberries, five of figs, nine of oranges, two of lemons, four of pomegranates, two of bananas, one of pine-apples, one of jujubes, one of olives, one of custard-apples, and one of dates."

The committee to award Wilder medals report:—

"The collections of fruits on exhibition are better than we had anticipated meeting at the close of the summer, which had been marked by disastrous frosts, ravages of insects, and unpropitious seasons. Some favored sections have escaped these misfortunes and come with the net results of their harvests to ornament the tables of the exhibition.

"We award the Wilder silver medal to the Michigan State Horticultural Society for the splendid display made up by the following associations: The Horticultural Societies of Monroe, Allegan, Kent, Ingham, Washtenaw, Grand Traverse, Benzie, Oscoda and Kalamazoo counties, the South Haven Pomological Society and George L. Burrows & Co., of Saginaw."

By request, T. T. Lyon, of South Haven, contributed a paper entitled "The Adaptation of the Soil and Climate of Michigan to the Production of the Finer Varieties of Fruits." The substance of this paper appears in the portions of this history devoted to the climatology of the State.

It may properly be stated that the Illinois Horticultural Society became so far discouraged at the prospect for a full exhibition of fruits that they were induced to surrender a portion of the space at first placed at their disposal, only to find that the whole would have been insufficient. They are understood to have heroically withheld their own exhibition on discovery of this fact in order to afford the best facilities possible to others. As it was, fully half the fruit from Michigan failed to find space for its display.

The State Legislature had appropriated \$1,000 to meet the expense of collecting the fruits and making the exhibit, but so economically was the business conducted that above one-half this sum was returned to the State treasury.

The medal awarded was duly received and placed in the State Library at Lansing.

On September 13th to 17th, 1875, the State Pomological Society again held its annual fair, in connection with that of the State Agricultural Society, at East Saginaw.

This exhibit was the most extensive heretofore made by the Pomological Society, comprising eleven hundred and ninety-two entries. The display filled Horticultural Hall and overflowed largely into two others, and the premiums awarded considerably exceeded the \$1,500 appropriated for such purpose. All were however, fully paid.

The influence of the recently established rules respecting nomenclature, excluding from competition all spurious and unnamed fruits, and the offer of premiums for correct nomenclature, were now becoming manifest, with the effect to considerably simplify and diminish the labors of awarding committees.

The annual meeting on December 7th to 9th, 1875, was held at Jackson. In the absence of President Parmelee, W. L. Webber was called to the chair.

By request, this society had made up a collection of fruits from the State fair at Saginaw, which they had placed in charge of C. A. Ilgenfritz, of Monroe, who placed them on exhibition at the Indiana State fair at Indianapolis, where they received fourteen awards amounting to \$155, together with the same number of diplomas.

Mr. Ilgenfritz having refused to accept anything above his actual expenses, the executive board adopted the following resolutions:—

Resolved, That this board accept with many thanks the generous donation of fruits made by the agent of the Michigan State Pomological Society, Mr. Ilgenfritz, of Mon-

roe, Michigan, who has placed his excellent collection of fruits at the disposal of this board.

Resolved, That in accepting the generous donation, this board places itself under great obligations to the fruit growers of our sister State in general, and to their gentlemanly and courteous agent in particular.

A paper from Joseph Archer, of St. Joseph, on "The Early Wilson Blackberry," was read.

Mrs. John Whittlesey, of St. Joseph, also contributed a paper on "How to Grow Early Tomatoes."

Professor Beal spoke of "Onions and Potatoes."

C. W. Garfield read a paper on "The Lessons of the Fair," treating especially of the vegetable exhibits and the manner of rendering awards upon them.

A paper was also contributed by John Whittlesey, of St. Joseph, on "Pruning and Training Grapes." For the last seven years he had pruned in March, when the injury from the winter had become manifest. Mr. W. has for many years advocated what is known as the long arm system of training our vigorous native varieties of grapes.

B. Hathaway, of Little Prairie Ronde, read a paper on "The Iona Grape," full of useful hints respecting its proper management, which perhaps may very properly be said to sound the key note of success in its management. The doctrines of the paper were strongly endorsed by Edward Bradfield, so long and prominently noted for his eminent success with this grape.

During the Tuesday evening session the proposition to change the name of the society to "Horticultural" led to a long and interesting discussion, resulting in the adoption of a resolution instructing the officers to take the necessary legal steps for such purpose.

The committee on orchards reported a list of the awards made by them during the past season. These awards will appear in the histories of the several counties in which the orchards are located.

B. Hathaway read a paper on Wednesday forenoon on "Pears," strongly recommending Bartlett, Tyson, Onondaga, as well as several others with qualification.

An interesting and elaborate report respecting the forests of Michigan was made by Professor Beal.

On Wednesday afternoon Governor J. J. Bagley spoke of the approaching Centennial Exposition, saying that its success was assured; that it was to be visited by people from every part of the world. The Philadelphians are doing great things for the exhibition. Michigan should do her full duty in the matter.

Addresses were also made by Henry Fralick, Witter J. Baxter, Judge Ramsdell and others.

After a full hearing of the case the whole matter was referred to the executive committee with instructions to act in concert with the executive committee of the State Agricultural Society.

The following persons were then elected officers of the society for the ensuing year:

President—T. T. Lyon, South Haven.

Secretary—J. P. Thompson, Detroit.

Treasurer—H. Dale Adams, Galesburgh.

Members of Executive Committee—E. H. Reynolds, Monroe; George Parmelee, Old Mission.

Vice-presidents were elected in several counties.

A temporary committee was appointed to act with a like committee from the State Agricultural Society, upon matters pertaining to the Centennial, consisting of George Parmelee, T. T. Lyon, A. J. Cook, J. P. Thompson, N. Chilson and E. H. Reynolds.

An invitation to hold an exhibition with the Detroit Scientific Association and the State Poultry Society at a winter meeting could not be accepted on account of previous arrangements.

Professor Beal, I. E. Ilgenfritz and A. Sigler were appointed a committee to confer with the executive committee of the State Agricultural Society for a renewal of arrangements for a union fair for the ensuing year.

On motion of Witter J. Baxter:

Resolved, That the State of Michigan is entitled to an earnest effort on the part of this society to make a creditable display of the fruits of the State at the Centennial, and that, through its officers and members, the society will use its most earnest endeavors to provide, at railroad stations in the State, suitable fruits, properly packed and prepared for exhibition.

Professor Cook gave a lecture on "Entomology," illustrated by figures of many of the insect pests of the fruit grower and farmer.

Hon. W. L. Webber, of East Saginaw, addressed the society upon "The Necessity and Means for an Agricultural Education in the State."

Hon. W. K. Gibson gave an address on "Horticulture, Considered in its relation to General Culture."

T. T. Lyon closed the evening session with a paper prepared at the request of the secretary, upon "The Winter Apples Recommended by the Society."

The Thursday morning session opened with a discussion of Mr. Lyon's paper.

Eugene Pringle followed with an address on "The Importance of Home Adornments and Improvement in Rural Affairs."

The committees reported a large and fine display of vegetables, Iona and Kalamazoo grapes; also four varieties of exotic grapes grown under glass, besides numerous other varieties, a large number of fine collections of apples and pears, including thirty-six varieties of pears from Ellwanger & Barry, of Rochester, N. Y., which received a vote of thanks by the society. The committee on flowers spoke highly of a fine Sago Palm from S. O. Knapp, also of a Camelia, *Ficus elastica*, and a Palm from Mr. Hubbard, a Fernery from Mr. McQueen, and delicate autumn leaves from Mrs. Dwight Merriman.

Six of the citizens of Jackson became life members of the society, besides twenty annual members.

A letter was received from S. B. Peck, of Muskegon, on "The Habits of the Codling Moth," concerning which there had been doubts in certain quarters as to the correctness of Mr. Peck's conclusions. It was referred to a committee consisting of Professor Cook, H. Dale Adams and I. E. Ilgenfritz.

After the usual complimentary resolutions the society adjourned.

The society's winter meeting occurred on February 16th, 1876. This was a business meeting of the executive board and was held at the residence of Professor A. J. Cook, at the Agricultural College.

Mr. Lyon presented the Wilder silver medal of the American Pomological Society, awarded at the Chicago meeting. It was ordered placed in charge of the State Librarian, at Lansing.

A letter from E. Bidleman, of Coldwater, invited the society to hold its next annual meeting at that city. The invitation was referred to the June meeting of the society.

Governor J. J. Bagley, W. L. Webber, Edward Bradfield and T. T. Lyon were constituted a committee to endeavor to secure for the society the assignment of suitable rooms in the new Capitol, suitable for a library, museum, and meetings of the society.

Mr. Lyon presented a schedule of the arrangements so far made for the pomological exhibit at the Centennial, indicating a purpose to maintain such exhibit during the continuance of the exposition; but specifying certain periods for perishable articles when likely to be in their best condition for such purpose.

The opening fruit display in May would be held in the central transept of the Agricultural building; but an annex will be provided for the September display.

The arrangements for the Centennial occupied the most of the forenoon. The plan of Professor Cook was finally adopted, grouping the articles in several divisions. Apples, the growth of 1875, were assigned to N. Chilson, of Battle Creek; small fruits to A. O. Wadsworth, of St. Joseph; plums to J. G. Ramsdell, of Traverse City; apples and other late summer and autumn fruits to H. Dale Adams, of Galesburg; pears and quinces to L. E. Ilgenfritz, of Monroe, and grapes to E. Bradfield, of Ada.

These gentlemen, with the president and secretary, were constituted a committee in general charge of the collection, shipment and exhibition of horticultural products.

The president submitted the following as a substitute of article one of the constitution of the society:—

The name of the society shall be "The Michigan State Horticultural Society," and its objects shall be the development of an adequate appreciation of the peculiar adaptation of the soils and climate of the State of Michigan to the pursuit of horticulture in all its branches, and the collection and dissemination of information bearing upon the theory and practice of the same, as well as upon the arts and sciences directly or indirectly associated therewith or calculated to improve or elevate the practice thereof.

After a warm discussion this was adopted as the sense of the executive board, and to be submitted to the society for adoption.

The evening session was devoted to the revision of the premium list. The agricultural society having reduced the appropriation for premiums in this department from \$1,500 to \$1,000, the premiums were reduced accordingly.

In consideration of the labor involved in the making of collections and other preparations for the Centennial exhibition, the arrangements for an orchard committee for 1876 were deferred.

A finance and business committee was established, to consist of three members of the executive board, by whom, or by the chairman, all accounts are to be audited, and thereafter paid, by the order of the secretary, drawn upon the treasurer, and countersigned by the president.

A. J. Cook, W. L. Webber and N. Chilson were appointed to act as such committee.

On motion of W. L. Webber,

Resolved, That no officer of this society shall create any debt against the society nor incur any liability against it to an extent greater than ten dollars without the previous approval of the finance committee.

On motion the treasurer was required to file his bond according to the provisions of the constitution, with good and sufficient sureties, to be approved by the president, for the sum of three thousand dollars.

The secretary was voted a salary of \$600 to be paid in monthly installments.

A motion by W. L. Webber proposed to transfer all life membership moneys to the general fund to be used for the ordinary expenses of the society.

Action upon the motion was deferred till the next annual meeting, to be then submitted to the decision of the society.

Thereafter the board adjourned.

In the spring of 1876 the then Governor, J. J. Bagley, issued a proclamation designating a day to be devoted to the planting of trees by the people of Michigan about their homes and also in streets and public grounds, in commemoration of the one hundredth year of our national independence. In compliance with such proclamation this was generally observed. Similar proclamations have been issued by subsequent governors but with less notable results.

The year 1875 was not a favorable one for fruit in Michigan. Notwithstanding this the State Pomological Society hesitated not to make the effort to display a collection of long-keeping apples at the opening of the Centennial exposition on May 10th, 1876. How far the attempt proved successful will be indicated by an extract from S. B. McCracken's "Michigan and the Centennial:"

"The event which first brought Michigan into prominence at the Centennial was the special exhibition of winter apples of the crop of 1875 in May, 1876. With the exception of a few plates of fine apples exhibited by the Iowa Horticultural Society, the display of Michigan was the only exhibition proving the keeping qualities of American apples."

"The unpacking and exposure of several barrels of choice apples, over six months after they were gathered, in a State a thousand miles distant, diffusing a delightful aroma through the hall and presenting such a variety of forms and of color from a yellowish green to a deep cardinal, all bright and crisp, attracted much attention and caused many inquiries as to the character of the country where fruit with such remarkable keeping qualities could be grown. The State Pomological Society was the principal exhibitor and received the award."

The judges, in their report to Director General A. T. Goshorn, say of the Michigan exhibits: "Remarkably well kept apples from the fruit houses of N. Hellings & Brother, Battle Creek, Michigan, and a superior collection from the Michigan State Pomological Society, embracing forty varieties of kinds that have been kept in ordinary farm house cellars of some of the members of the society. As the season is very late for good keeping apples, the committee made notes of those varieties which seemed to them meritorious, taking as a standard of character the actual condition of each variety with the best known specimens of its own kind, as well as of good quality."

"In the collection of the Michigan State Pomological Society, the finest were the Roxbury Russet, Rock, Willow Twig, Smith's Cider, Rhode Island Greening, Jonathan, Fallawater, Esopus Spitzenburg, both kinds of Newtown Pippin, and Red Canada. The last seems remarkably fine for this part of the country. Steele's Red Winter, as exhibited by Mr. John Waterman, of Ply-

mouth, Michigan, were so nearly like Red Canada that if there was any difference the committee failed to detect it."

"The collection from Messrs. Hillings embraced forty dishes in ten varieties, all high colored, and all large and well grown fruit. They were all grown in Michigan in 1875, and by the method pursued by them in their fruit house, had even the stems as green and firm as when plucked from the trees. The Rhode Island Greenings and Northern Spys were fully equal to the best average specimens known. Newtown Pippins, Baldwins, Jonathan, and Westfield Seeknofurther very good, Red Canada, Spitzenburg and the others not quite equal to those preserved in the common way."

Mr. Ilgenfritz, in his report to the board of managers, among other things, says:—

"The apples of Michigan were brought forward on time and spread upon the tables designated in the center of Agricultural Hall. Those who made this display anxiously awaited the competition of other States, but none appeared at the place assigned. Iowa had about a dozen varieties on twenty plates, but did not bring them into the area, where comparison could be made, but retained them in the space assigned for her general agricultural exhibit, so that, in fact, Michigan was alone in this first display of fruit. The table allotted to Michigan was well filled and overflowing with about two hundred and fifty plates, containing forty different varieties of apples of the greatest popularity. There were thirty-two contributors to this display."

The horticultural display of the State at the exposition, so far as anything notable is concerned, closed with this exhibit until the opening of the grand display of northern pomological products to be made from September 11th to 17th.

The summer meeting of the State Pomological Society, which usually occurs in June, was, in 1876, deferred until July 27th, when it was held at Detroit, upon the invitation of the Wayne County Horticultural Society. The meetings were held in Young Men's hall, with a large and attractive display of fruits, flowers, vegetables and manufactured goods shown in the main hall, with an exhibit of fish in the basement, convenient to the water pipes, where also was an additional display of flowers.

The occasion was rendered still more pleasant by the presence of a distinguished delegation from the Ohio Horticultural Society, among whom were President John A. Warder, Secretary M. B. Bateham, Treasurer George W. Campbell, J. J. Harrison, N. Ohmer, Leo Weltz and Mr. Lawrence, of the Ohio Farmer.

An address of welcome by President W. T. Jupp, of the Wayne county society, was responded to by President Lyon, of the State society, and also by President Warder, of the Ohio society.

Bela Hubbard, of Detroit, opened a discussion on roadside tree planting. He thought they were usually planted too close. They should be at least thirty or forty and, in some cases, fifty or even one hundred feet apart.

President Warder preferred to plant close for early shade, but to thin early to insure perfect development.

Premiums had been offered for exhibits by the Wayne county society, which were awarded on Wednesday and Thursday, and the premiums, when of articles suitable for such purpose, were placed on exhibition.

A specially interesting and instructive report was made by President John A. Warder upon the fish exhibit, which was furnished by S. H. Davis

& Co. and was cared for by Captain A. Harriman, a portion of the exhibit having come from the fish pens of George Clark, in Detroit river, below the city.

The joint annual fair of the State Agricultural and Horticultural Societies occurred at Jackson on September 18th to 22d, 1876.

The number of entries in the horticultural department was eleven hundred and seventy-eight.

This, notwithstanding the great interest universally felt in the Centennial exposition which attracted a very large attendance from Michigan, was a superior exhibition in all its departments, and especially such in floriculture, horticulture and pomology, although the hall devoted to these exhibits was far from satisfactory.

Under the management of Professor Cook the plan of bringing together all the entries in each class was put into practice, greatly to the convenience and satisfaction of viewing committees.

The display of plants and flowers was unusually extensive, varied and excellent.

President Lyon, of the State Pomological Society, having been appointed one of the judges in pomology at the Centennial with reference to the display of northern pomological products to occur in September, was necessarily absent from the State fair in the discharge of his duties as such.

It seems probable that horticulture received little thought at the hands of the early promoters of the Centennial, since the arrangements for this branch of the undertaking clearly provided merely for flowers and plants, ignoring pomology, and apparently considered the latter as a branch of agriculture and devoted no space to it. The latter seems the more probable since, when the necessity for space for the pomological exhibit arose, it was supplied by a simple shed filled with tables as an annex in the rear of Agricultural Hall, quite away from all the usual thoroughfares and altogether divorced from all horticultural surroundings.

The distance and the peril of transporting small fruits during the warmer part of the season were so great that it was early determined not to attempt an exhibit of the small fruits proper but to commence with plums, peaches and apples.

Few exhibits, therefore, appeared from Michigan till near the time for the general display of northern pomological products, which was to open on September 11th.

The omission of small fruits relieved Mr. Winchester, leaving the work of collection to be performed by Messrs. Ramsdell, Bidwell, Adams, Ilgenfritz and Bradfield, who proved very efficient, each in his special department.

A fine collection of late summer and autumn apples from J. W. Humphrey, of Plymouth, (from the experimental orchards of T. T. Lyon) with plums from J. G. Ramsdell, of Traverse City, and peaches from H. E. Bidwell, of South Haven, arrived during the week, but the time fixed was quite too early for Michigan winter apples, which were, therefore, conspicuous by their absence, which became the occasion for disparaging criticism on the part of some who had noticed the triumph of Michigan at the opening in May.

Soon after the close of the week collections from Michigan began to arrive. Mr. S. Hoppin appeared with a large and superior exhibit, also fine peaches, pears and grapes from various exhibitors, and when the full exhibit was upon the tables the fall display stood quite as high in the estimation of both judges and visitors as the spring exhibit had previously done.

Of this last display, the Philadelphia Sunday Times said: "This magnificent display from Michigan opens the eyes of Philadelphians to the great resources of that State in fruit culture. Michigan may congratulate herself on the general admiration the display has excited."

Mr. Ilgenfritz says (Michigan and the Centennial, page 495,) that "the people of our sister States were not alone, but were joined by the foreign visitors in showering encomiums on the Michigan fruit exhibit. The French commissioners would not be satisfied until they carefully packed a box of twenty-eight of our most popular varieties, with their correct names attached, that they might take them with them to show to their Horticultural Society. Michigan exhibited during the season three hundred and seventeen varieties of apples, seventy-four varieties of pears, twenty-eight varieties of peaches, nineteen varieties of plums and thirty-eight varieties of grapes. Total number of plates, three thousand four hundred and seventy-four."

These were the free gifts of numerous contributors whose names may be found in the pages of the memorial work of S. B. McCracken, of Detroit; but lack of space forbids their insertion.

The judges were classified by the Centennial Commission in groups, and to one of these groups was assigned the Department of pomology. Prior to the grand display of northern pomological products in September, this group of judges had been represented solely by those members of the group residing at or near Philadelphia; who had met weekly to examine and pass upon such exhibits as should from time to time make their appearance upon the tables, which, up to the time of this grand display, had remained in one aisle of Agricultural Hall. The opening of this northern exhibit at once compelled a resort to the annex, in which was provided a capacity for the display of fully 15,000 plates, and nearly the whole of which was densely filled during the period of this exhibit.

To provide for the press of work in this emergency, this group of judges were, during this week, reinforced by members appointed expressly for this occasion; and on the arrival a meeting was held, and it was resolved to divide the exhibits into classes, and to assign each class to a relative subdivision of the group of judges. Under these arrangements the work was subdivided and assigned as follows:

Apples—T. T. Lyon, Mich.; Suel Foster, Iowa; W. S. Schaffer, Penn.

Pears—Parker Earle, Ill.; A. W. Harrison, Penn.; Edwin Shatterthwaite, Penn.

Stone Fruits—Wm. Parry, N. J.; M. Martin, —; J. Yellowly, Miss.

Miscellaneous Fruits—Josiah Hoopes, Penn.; J. T. Suit, Del.; Thos. Meehan, Penn.

The work under these supervisions, covering as they did such an immense mass of material, was necessarily very laborious and protracted; especially that upon apples, which comprised a very large proportion of the whole exhibit.

The judges also found themselves somewhat embarrassed by the somewhat novel and peculiar regulations established by the Centennial Commission for the making of the report and the reading of awards. The sole award to be made by these, or in fact any of the judges, was a bronze medal accompanied by a diploma, which were to be bestowed upon each meritorious exhibit, without reference to competition; and the function of the judges consisted in recommending such awards and stating explicitly, in each instance, their reason for such recommendation, such recommendation being subject to examination

and approval of the Centennial Board before the medal and diploma shall issue.

As will be at once discovered these regulations placed each exhibit strictly upon its own merits; and judges were expressly prohibited from instituting comparisons between exhibits, but were required carefully to state the reasons on which they based their recommendations. This system of making awards of merits is claimed by the Centennial Commission as new, and is, by them, designated as the American system. These awards were intended for exhibitors, whether societies or individuals; and in addition to such recommendation, the Commissioners, by express resolution, authorized the issuing upon similar recommendation of diplomas, also to the societies or States under whose auspices such collections should be placed on exhibition.

The judges were also required in addition to the recommendations of medals and diplomas, to prepare an elaborate report upon the exhibits coming under their examination, characterizing such exhibits as they should deem meritorious, which report was intended for publication at the proper time; and they were still farther required, at the close of the exhibition, to submit a general and final report through the Secretary of the group, covering the entire field of their examinations.

Careful and well considered action in each case was secured by the requirement that the reports and recommendations should each pass the ordeal of an organization by the entire group of judges, and be subscribed to by each member of the group.

It will doubtless be observed that, under this system of awards, the mere granting of a medal and diploma supplies no means of determining the merits of such exhibit as compared with another similarly favored. In such cases the special and final reports must be looked to, to furnish reliable data for such comparison. These reports are expected to receive the fullest publicity, through the press of this country as well as that of Europe; besides becoming part of the history of the exposition by appearing in the published volume of its doings. We are also given to understand that it is the purpose of our State Centennial Commission to issue a volume embodying notices of all Michigan exhibits, with the names of the contributors, as a means of bringing and keeping before the general public a knowledge of the extent and value of the resources of the State.

The forestry exhibit from this State was in charge of Professor W. J. Beal, of the Agricultural College. "The catalogue covers about forty pages of print, classified so as to show both the Latin and popular names, description, locality from whence received, and donor's name, of each specimen. There were about twelve hundred specimens of forestry, comprising trunks and cross-sections of trees, blocks, boards, natural curiosities in growth, shrubs, seeds, etc."

The annual meeting of the State Pomological Society was held at Coldwater, on December 6th, 1876, upon the invitation of the Coldwater Horticultural Club.

Secretary Thompson being prevented from attending on account of severe illness, C. W. Garfield was chosen Secretary *pro tem*.

An address was first given by C. W. Garfield on "Methods of Exhibiting Fruits and Flowers," considering the subject especially from the educational standpoint, and containing many carefully considered suggestions. The afternoon was consumed in the discussion of the subject.

On Tuesday evening, after the welcoming address of Mayor Cutter and a response by the president, an address was given by Professor Beal on "The Classification of Apples," describing the systems devised by various pomological writers. He spoke of the increasing difficulty of making distinctive descriptions from the increasing number of varieties, and the consequent need of describing the peculiarities of the tree and foliage as well as the fruit.

This was followed by a report from T. T. Lyon of his experience and observation at the Centennial exhibition, portions of which have already been given.

On Wednesday morning, through Professor A. J. Cook, an invitation to the society to hold its February meeting in the city of Pontiac, was received from C. K. Carpenter, president of the Oakland County Agricultural Society.

The invitation was accepted.

E. Bradfield, of Ada, gave an address on "Winter Protection of Grapes," urging that a grape worth having at all is worth covering in winter.

M. B. Bateham, of Painesville, Ohio, gave an address on the "Use of Fruits in the Home," urging their more general use as an article of diet.

On Wednesday afternoon the question of changing the name of the society from "Pomological" to "Horticultural" was called up and decided negatively.

The following persons were elected officers of the society for the ensuing year:

President—T. T. Lyon, South Haven.

Secretary—Charles W. Garfield, Lansing.

Treasurer—H. Dale Adams, Kalamazoo.

Vice-Presidents were also chosen for each of the fruit growing counties.

The subject of "Orchard Cultivation vs. Mulching" was discussed by W. C. Barry, of New York, Mr. Chapman, Mr. Bateham and W. J. Beal, leaving the question still an open one.

Professor A. J. Cook gave the opening lecture on Wednesday evening upon the Canker-worm (*Anisophteryx vernata*, Peck) and (*A. Pomelaria*, Har.), which seemed to be spreading in the State. This long, interesting and valuable lecture was followed by

Henry G. Reynolds with a paper on "The Isolation of Our Country Homes," contrasting the crowded condition of peasant homes in Europe with the opposite extreme as practiced by the agricultural population of this country.

The committee on fruits exhibited, through Mr. Ellwanger of New York, reported one hundred and fifty plates of apples contributed by eight exhibitors.

In acceptance of an invitation from the proprietor the society, on the morning of Thursday, visited the Lewis art gallery, after which the closing session was held.

An essay by Mr. A. G. Gulley was read by the secretary, entitled, "A Few Ornamental Trees."

Very complimentary reports were made by Mr. Barry on "Plants and Flowers," and by C. A. Ilgenfritz on "Miscellaneous Fruits."

In response to requests to name the seven varieties of grapes by them deemed most desirable for general cultivation,

Mr. Bateham named Lady Eumelan, Hartford, Delaware, Concord, Salem or Agawam, Iona, and added an eighth, Catawba.

Mr. Bradfield named Adirondac, Concord, Hartford, Isabella, Delaware, Iona, Clinton.

Professor Beal named Concord, Agawam, Delaware, Clinton, Hartford, Adirondac, Iona.

The treasurer's report showed \$336.05 in the treasury.

C. W. Garfield was chosen as delegate to the annual meeting of the Ohio Horticultural Society and H. Dale Adams to that of the Western New York Horticultural Society.

Mr. Bateham, by request, gave a short address on "Plum Culture and the Curculio," stating that, from the best information, there were 150,000 plum trees in orchard in Ohio. Two-thirds of these are in five or six counties in the southwestern part of the State, near Cincinnati, of which the majority are damsons, mostly "Shropshires." The curculio is kept in subjection by the jarring process.

The following preamble and resolution was offered by E. Bradfield, and supported by Professor Beal:

WHEREAS, The society did, by its vote yesterday, refuse to adopt a name recognizing anything but the cultivation of fruit; therefore,

Resolved, That all premiums not connected with the cultivation of fruit be stricken from the premium list of the society.

The resolution was referred to the executive board.

The society was invited to hold its next annual meeting at Grand Rapids. The invitation was tabled till the next meeting.

After the adoption of a series of complimentary resolutions the society adjourned *sine die*.

The State Pomological Society's winter meeting was opened at Pontiac, on February 6th, 1877.

Reports as to fruit prospects were not very favorable, and the injury to trees from the severity of previous winters was quite fully discussed, together with the question of the ability of black hearted trees to overcome such injury.

H. Dale Adams submitted his report as delegate to the Western New York Horticultural Society.

C. N. Merriman gave an address on "Helps, Hurts and Hindrances to the Pomology of Michigan."

The president then delivered his annual address, in the course of which various suggestions were made respecting the action of the society.

On Tuesday evening Hon. Byron G. Stout welcomed the society to the city and county, which was responded to by the president.

A paper was then read by Mrs. William Satterlee, of Pontiac, on "Window Gardening."

Hon. Byron G. Stout was the next speaker on "The Apple Crop—shall we increase it—and how—and what shall we do with it?" The address was full and exhaustive, and was discussed by Professors Beal and Whitney and C. N. Merriman.

The secretary next read a paper from George Parmelee, of Old Mission, on "Pruning," replete with valuable suggestions drawn from long years of orchard experience. It elicited a few remarks by T. T. Lyon and John Thomas.

S. B. Mann, of Adrian, closed the evening session with a paper on "The Pomology of Lenawee County," in the course of which he refers to the plantations of Mr. Peter Collier, Porter Beal and Dr. Bailey, the last of which was being ruined by the canker worm.

On Wednesday morning the session was opened by an address from H. Dale Adams on "Crab Apples—How to Grow and How to use Them."

Professor Beal followed with an address on "Horticultural Experiments," considering their importance as a means of establishing or eliciting facts and general information, together with the qualifications requisite in the experimenter.

T. T. Lyon followed with a long and exhaustive paper on "The Necessity for a State Fruit Catalogue, the Purposes which it should be made to Subserve, together with the Material to be Embraced," accompanying the paper with an illustration of the proposed form.

The recommendations of the paper were referred to a committee consisting of H. Dale Adams, C. N. Merriman and A. G. Gulley, with instructions to report at the June meeting.

At the opening of the Wednesday afternoon session a poem was read from the pen of John Southard, of Oxford, after which came a paper by I. S. Linderman, of South Haven, on "Economy in Marketing Fruits."

Henry W. Lord, of Pontiac, then read a paper on "Evergreens—Their Uses for Ornament and Economy on the Farm." The paper opened with numerous fanciful allusions and poetical quotations, and proceeded with valuable suggestions, intermingled with illustrations both mythological and practical.

Mrs. A. E. Green, of Farmington, very appositely followed with a paper on "Flower Gardening as a Home Accompaniment."

Mr. Thomas in a few words of comments and inference said, among other good things: "I am a very plain man, and perhaps most of you would not think, from a gaze at my exterior, that I am a passionate lover of flowers, but there is nothing in which I take greater delight; and, from a long experience in farm life, I can say that although I have given a great many hours to the cultivation of flowers, the time thus spent has been by no means lost. I am no poorer for my flower garden. I am richer in all that makes life worth living."

The committee on exhibits, other than apples, made a pleasant and fanciful report, comprising a variety of items.

This was followed by a preamble and resolutions reported by the committee on the decease of John Gilbert, of Ovid; Judge Monroe, of South Haven; William Bort, of Niles, and Henry Seymour, of Grand Rapids.

A letter was read from E. F. Guild, of East Saginaw, giving his method of preserving grapes, which is by gathering them during a dry day, placing them in layers in a stone jar with soft paper between and bury the jar in dry soil, below the reach of frost.

E. Moody, of Lockport, N. Y., gave a description and history of the Mann apple of which he had specimens on exhibition.

On Wednesday evening Professor Ingersoll, of the State Agricultural College, gave an interesting and instructive address upon "Orchard Drainage and Cultivation."

"Landscape Gardening for Farmers" was the subject of the next address by Secretary Garfield.

The evening session was closed with a report from the committee on nomenclature.

On Thursday morning a resolution was offered by Mr. Whitney proposing that the society take steps to make an exhibit at the Chicago exhibition the coming autumn. Referred to the executive board.

The disposal of the life membership fund upon the motion of W. L. Weber, made in executive meeting in February, 1876, came up for consideration, accompanied by a communication from the mover, giving reasons for the same. By a vote of the society the motion was lost.

Professor Cook being necessarily absent the Secretary read a paper prepared by him for this meeting on "The Imported Cabbage Butterfly," (*Pieris rapae*, Schrank,) which had then just made its appearance in eastern Michigan. The professor stated that it was imported into Canada from Europe, in 1857 or 1858. It was observed and taken at Quebec in 1859, and from that place as a center it has rapidly spread to the west, and more rapidly to the south, reaching Washington some years since, entering Michigan in 1876, and Chicago, Illinois, in November, 1877.

A short discussion was had as to the possibly deleterious results from using the trimmings from young trees as cions for the propagation of nursery stock.

The testimony of Messrs. Moody, Merriman and Ilgenfritz was favorable to such practice.

The committee on apples reported that by actual count there were four hundred and sixty-one plates of over one hundred varieties, and perhaps ten not named. In closing, the committee remark: "We wish we could do more to stimulate people to show none but good, nice specimens. We have overheard some here saying how much better they could have done if they had only tried. When picking fruit, hunt up the perfect specimens and take extra care of them. Look for specimens of fair size of the variety, perfect shape and color, without spot, worm, or blemish. Leave the stem on. This is a grand show of fruit for this time of the year."

The society adjourned to meet at South Haven, in June, at the call of the president and secretary.

The executive board accepted the invitation to hold the annual meeting in December, 1877, at Grand Rapids.

On June 19th to 21st, 1877, pursuant to adjournment, the society met at South Haven.

The welcoming address was delivered by C. J. Monroe, and responded to by H. Dale Adams on behalf of the society.

The executive committee, at a session held during this meeting, determined to follow the practice of the Agricultural Society by placing division superintendents in charge of the several portions of the exhibit, under the direction of the general superintendent.

J. P. Thompson, secretary of the State Agricultural Society, read a paper entitled "What is the use of a State Pomological Society?"

Following this, a lengthy discussion arose upon the question: "How far can we control the bearing year in our apple orchards?"

Thinning or removing the young fruit, twisting or bending the branches, and the use of special manures were all suggested and in some cases favorable results were mentioned, but no generally accepted plan was suggested.

Professor Beal responded to the next topic: "What Native Trees are Best Adapted to Plantations about a Home?" His preferred trees for such purpose were Yellow Oak, American Elm, Basswood or Linden, Tulip tree or Whitewood and, in its proper place, Blue Beech, Sugar Maple, White Ash, Pepperidge or Sour Gum. Among evergreens, Red or Norway Pine, White Pine, White Spruce, and Hemlock Spruce.

On Wednesday morning the first business was the report of the committee

to whom was referred the proposition of President Lyon looking to the cataloguing of the fruits found to succeed in this State.

The committee reported as follows:

During the last meeting of our society at Pontiac, Mr. Lyon read a paper upon the topic, "The State Pomological Society vs. Fruit Lists," which embodied a number of valuable suggestions and important recommendations upon matters connected with the formation of a permanent fruit catalogue. Your committee, to whom this paper was referred, have had the same under careful consideration and unanimously agree to recommend that the plan of forming a catalogue of varieties therein suggested be adopted by the society. Further, your committee recommend the appointment of a standing committee of three by the president of the society, which shall be denominated the "Committee on Fruit Catalogue," said committee to have the entire formation of the new catalogue under its care and control, and to furnish a copy of the same, so far as completed, for publication in the annual proceedings of the society from year to year. It seemed to the committee that this was a very important part of the society's work, and deserving of the most careful and discreet attention and management, and in submitting these recommendations, they feel to urge that the committee chosen shall be composed of men who can act for a series of years, as any change of men might involve a possible change of policy which would check the continued successful work of making the catalogue.

Respectfully submitted,

H. DALE ADAMS,

C. N. MERRIMAN,

A. G. GULLEY.

Committee.

Mr. Bradfield had been expected to open the discussion of the topic, "What are the Prominent Errors Made by Beginners in Grape Culture?"

In the absence of Mr. Bradfield A. O. Winchester, of St. Joseph, was called on, and in reply to the question what varieties he would recommend for profit, he replied, the Concord.

To a question about errors in pruning he replied: "The great error lies in not giving the roots enough to do. The pruning is too short. The plants should be put further apart and the arms extended eight feet each way. The only summer pruning should be the pinching of the tops when they reach the upper wire of the trellis."

Mr. Engle, of Paw Paw, preferred to plant only six feet apart and to train to stakes.

Mr. Dyckman was using his vineyard as a trap for the rose chafer. They prefer grapes to peaches, and they are more easily gathered from the former. We therefore gather them from the grapes by hundreds and thus save the peaches.

On the next topic, "The Mole, What is He Good For?" the discussion was opened by a short paper from Professor Cook, who strongly urged his value as a destroyer of insects.

Professor Beal took the opposite side of the question, urging that the mole fails to discriminate between injurious and beneficial insects; and while rooting up or undermining our bulbs and strawberries and stirring up the lawn in his quest for insects he is at the same time destroying large numbers of our best friends.

Mr. Lannin had suffered great injury to young pear trees which were under-

mined and nearly killed by moles in their search for angle worms, and yet he has an abundance of cut-worms upon the same field.

Other testimony was given to the effect that they not only root up but eat tulip and hyacinth bulbs, corn, peach pits and chestnuts.

The best pears for Western Michigan were named by C. Engle, of Paw Paw, from his personal experience, as follows: Anjou, Bartlett, Bloodgood, New Gray Winter, Lawrence and Angouleme. He also spoke favorably of Dix, Howell and Clapp's Favorite.

The next subject was: "How Can we Make the Best Use of Evergreens in Protecting our Orchards?"

The discussion of this question developed wide difference of opinion with preponderance, perhaps, in favor of merely checking the force of the wind, especially in exposed situations along the lake shore.

"Of the newer strawberries, which are the most promising?" was the next subject discussed.

The subject was opened by a paper from T. T. Lyon, giving short descriptions, with date of ripening, the present season, of some twenty varieties, new and old, which had fruited on his grounds the present season.

Professor Beal was highly pleased with Matilda, which, apparently, has been dropped less for lack of merit than from the want of some one to urge its really valuable qualities.

Mr. Thompson objected to the Wilson as too sour, but was told that it colors early, and goes to the market before its flavor is matured.

On Wednesday afternoon a paper was read from the pen of S. B. Peck, of Muskegon, entitled "The Age in which we Live," in which the old and the new were racily and pithily contrasted.

Professor W. J. Beal followed with an address on the "Longevity of Varieties and Races," in which the processes of originating and perpetuating varieties were considered, and the "wearing out" theories of Thomas Andrew Knight and others, as well as the experiments and deductions of Darwin came under consideration.

The committee on fruits exhibited were to leave on the afternoon train, and now submitted their report, which states that thirty-five varieties of strawberries were exhibited. Among these was one exhibited by H. E. Bidwell, under the name Centennial, the true history of which is as follows: B. Hathaway, of Cass county, who had long been engaged in the origination of seedling strawberries, had a large number of these in fruit on the occasion of a visit to his place by H. E. Bidwell, at the time a resident of South Haven, Michigan. Mr. Bidwell purchased one plant each of ten different seedlings, of which this was one, transferring them to his place at South Haven, where they were allowed to pass as his own originations. At the June meeting of the State Pomological Society held at South Haven, in 1877, Mr. Bidwell exhibited very fine specimens of this berry as Centennial.

Mr. H. Dale Adams, of Galesburgh, who had received plants of several of Mr. Hathaway's seedlings for trial recognized this as one of them, and so stated to the society. The matter was not investigated at the time, and the variety was, locally, disseminated under this name.

Mr. Bidwell having removed from the place, and the variety beginning to attract considerable attention, the South Haven Pomological Society, no doubt supposing Mr. B. to have been the originator, and to avoid possible confusion with another Centennial, re-named this—Bidwell.

It was only after the variety began to attract attention abroad that, upon an appeal from the late Charles Downing and E. P. Roe, T. T. Lyon applied to Mr. Hathaway and received from him the history of its origin as stated.

Five varieties of cherries were also reported, together with a splendid basket of Golden Russet apples from D. C. Loveday.

"Green Manuring" was the subject of a short talk by J. P. Thompson.

The fungus character of the rust which attacks the blackberry was the subject of a short discussion. The remedy proposed was to dig and burn the affected plants.

"The Canker-Worm in Lenawee County" was the title of a paper from Dr. Woodland Owen, of Adrian. This matter will be fully treated in the history of Lenawee county, to which the reader is referred.

In an orchard of fifty cherry trees, what varieties shall be planted for market?

Mr. Fox, of Kalamazoo, named Early Richmond and possibly Baumann's May.

Mr. Adams had on his place twenty-one varieties and had marketed one hundred and fifty bushels per year, but could not sell Early Richmond. It is too light colored. He preferred May Duke, Napoleon and Black Tartarian.

Mr. Lyon objected to Baumann's May as too poor in quality and too small. He also named Louis Phillippe as a profitable variety.

The subject of "Insects" again came up, when Mr. Lyon stated that the currant worm has two broods in a season. The eggs are always deposited upon a leaf or two near the ground. As soon as hatched the larvae attack the leaf on which they chance to be, eating numerous small holes through it. The removal of these leaves as soon as these holes appear will destroy the entire brood. The application of powdered white hellebore, either dry or in solution, is also effective.

Mr. Dyckman subdued the rose chafer by employing children to hand-pick them.

L. H. Bailey subdued them by the application of Paris green in water.

Mr. Lyon thought the attempt to repel the curculio by the use of offensive odors might repel them when there were other pastures at hand, and yet fail in case they fail of other resorts.

J. S. Owen gave a careful history of the transformations of the rose chafer, together with the plants usually attacked, stating that four years ago (1873), they were first discovered near Douglas, and have rapidly spread and increased in numbers.

Mr. James Satterlee, of Greenville, gave an essay on "Our Friends, the Birds," dwelling upon their great importance as insect destroyers.

The subsequent discussion developed the usual difference of opinion upon the subject.

"The Best Annuals and Perennials for Home Culture" was opened by S. O. Knapp, of Jackson, by introducing W. K. Gibson, of Jackson, who gave an interesting and instructive talk on the subject, and was followed by Mr. Knapp, Mr. Adams and Mr. Gulley.

The closing address of the evening was by A. S. Dyckman, his text being, "The Manufacture of Wine and Cider not Pomological."

On Thursday morning the first topic for discussion was "Water in Horticulture—How can we Employ it to the Best Advantage Artificially?"

The use of windmills was commended, and the use of water from streams above the level was mentioned as a most valuable circumstance. Watering upon the surface was generally objected to, and the removal of the surface earth before applying water was commended. The use of beach sand as a mulch was suggested.

The committee on fruit packages reported, recommending the peach baskets and berry crates manufactured by the South Haven factory.

The committee on fruit commended seven varieties of apples, the growth of 1876, as supplementary to a previous report.

The committee on plants and flowers were very much gratified by the unusual display of flowers, mentioning twenty-five varieties of roses and four fine bouquets from the Lake Shore nurseries, a very fine fuchsia from C. J. Monroe, a fine abutilon from Mrs. J. J. Atherby, besides bouquets from D. C. Loveday, John Williams and H. J. Linderman, also five geraniums from Mrs. Cook.

The usual complimentary resolutions were adopted and the society adjourned *sine die*.

At a session of the executive board a letter was read from Professor R. F. Kedzie stating his difficulties in attempting to solve the problem of the influence of forests upon the climate of the State unless by the aid of meteorological observations extending over a series of years, and suggesting that it may be found practicable for the State Pomological Society to secure the taking of such observations at least in the fruit growing regions.

The whole matter was placed in the hands of the president, the secretary, E. H. Reynolds and George Parmelee.

At a session of the executive board held at Detroit, July 12th, 1877, the Calvert Lithographing Company submitted a design for a diploma. After some time spent in examining it, the decision of the matter was deferred till the next session of the board.

The union fair of the State Agricultural and Horticultural Societies occurred at Jackson, on September 17th to 21st, 1877.

The season had been an unfavorable one for the fruit crop, and great difficulty was anticipated in making a creditable exhibit. Great was the surprise, therefore, when the entries ran up to nearly one thousand five hundred—about five hundred more than at any previous fair, beside which over one hundred came too late to be accepted.

Although, owing to the scarcity of apples, the average of quality was hardly equal to that of more plentiful years, the abundance and general character of the exhibit has rarely been excelled.

The floral display was especially creditable. Included in this display was a memorial design from the greenhouses of the late John Suttle, of Grand Rapids, emblematic of faith, hope and charity, the work of Mr. Turner, a fitting tribute to the memory of one of the earliest members of the society.

His death occurred on September 13th, 1877. It was appropriately recognized by the executive board in a series of resolutions.

The annual meeting of the State Pomological Society occurred at Grand Rapids, on December 4th to 6th, 1877, upon the invitation of the Grand River Valley Horticultural Society.

A letter from B. Hathaway, Little Prairie Ronde, reports that he believes that judicious thinning will develop a tendency to fruit every season. The same end may, in a measure, be attained by judicious pruning. Either from

my thorough pruning or other cause not apparent, I have always been what is called fortunate in having a fair crop of apples in seasons of comparative failure. I had as many apples this year as last, and, as usual, the majority were Northern Spys.

S. H. Comings, of St. Joseph, writes: "I send a can of cranberries picked from a natural cranberry marsh I am improving near this place. I would also call the attention of the society to the importance of the cultivation of this fruit in our State, where I suppose there is a large amount of land exactly adapted to this branch of horticulture."

B. G. Buell, Little Prairie Ronde, writes: "There are many good orchards of apples in Cass county, but the line of successful peach growing seems to be north of us. We have a goodly number of intelligent fruit men in the central and southern portions of our county. If some of those live fruit committees were to take a trip of observation among us, it might be the means of awakening our staid old burghers to their benefit, and also to that of the society."

A letter was received from George Haskell, of Ipswich, Massachusetts, a noted experimenter in cross-breeding grapes, speaking very highly of some of the varieties which are of very high quality, but too late in ripening for our northern climate. Although but partially successful, he is encouraged to persevere.

A letter was also received from George W. Campbell, of Delaware, Ohio, giving his conclusions as to the value of a large number of the newer grapes. He concludes that: "As the result of many years' experience and observation, I believe that hybridizing the grape will produce varieties of fine quality and of a character nearly, if not quite, equal to the finer foreign sorts; but this fine quality is, to a considerable degree, at the expense of that hardiness of constitution necessary to withstand our variable and vigorous climate; and though these hybrids are exceedingly interesting and valuable for amateur culturists, and for especially favorable localities, we must look to native seedlings or use native crosses for popular sorts suited to the wants of the people for universal cultivation."

Oral reports from various localities indicate less than one-fourth of a crop of apples and a light crop of other fruits except perhaps small fruits.

On methods of exhibiting fruits, Professor W. J. Beal urged the need of improvement in the method of displaying and labeling samples, and showed samples of plates, clasps and cards used by the Massachusetts Horticultural Society.

Mr. N. Chilson had expected to receive samples from manufacturers looking to the purchase of a supply for this society but they had failed to arrive. He also recommended the simplification of committee work by the placing of all competing articles together; also by the appointment of an assistant superintendent for each division who shall act as chairman of the viewing committee.

After a full discussion the whole matter was referred to the executive board.

A paper was then read by E. Brafield, of Ada, on "My Failures in Grape Growing." The first failure was in paying a high price for a dozen assorted vines, all of which proved to be Clintons. The next dozen plants were purchased from an honest tree peddler and warranted to be four Delawares, four Dianas and four Concords, but which turned out to be nine Clintons and three Catawbas; the latter, for my locality, being worse than Clinton.

The next mistake, on a larger scale, was in planting too many varieties—some forty or fifty in all.

The next was, growing two opposite arms where rows ran up and down a hill, as the ascending arm robbed the descending one. Besides, after a few years' growth, the descending one could not be bent down for protection in winter. This mistake was remedied by cutting away the ascending arm and giving double space to the descending one.

Another mistake was in allowing the Adirondac to overbear, and, in consequence, fail to ripen the fruit.

Another was, supposing that a miller could make money by growing grape vines. He soon discovered that taking toll was the better business.

His "most foolish mistake" was in supposing he could grow more Concords than Ionas on a given area.

Rotation of crops in horticulture was next discussed, the subject being opened by a short address from J. N. Stearns, of Kalamazoo.

Provision was made for securing a room in the new capitol in which the library and other property of the society could be kept.

The president and secretary were empowered to arrange with the executive committee of the State Agricultural Society for a union exhibition at the next annual fair.

Arrangement was also made for the purchase of plates, clasps and cards for the society's use.

On Tuesday evening the society was welcomed to the city by Mayor G. W. Thayer, and his address was responded to by President Lyon.

An essay followed by Mrs. Sophie H. Knight, of Lansing, on the "Hartford Fern in Home Decoration."

"The Winter House Garden" was the next on the programme, and, in the absence of Mr. Gibson who had been expected to lead in the discussion, Secretary Garfield was called on, and made some extended remarks, which were followed by Professors Beal and Tracy, President Lyon and George Taylor.

"Horticulture—Yesterday, To-day, and To-morrow," was the topic of a paper by Professor Tracy, of Old Mission, which was largely historical, and raised doubts whether we are making any important advances in the science beyond that of two hundred years ago. He claimed that there is great need of enthusiastic students.

"How shall we preserve ourselves from the wiles of the fruit tree agent?" was considered by Judge Ramsdell, of Traverse City. After some account of his early purchases from tree agents and the wonderful transmutations of Vergalien pears into Stevens' Genesee; Vicar into Diels; Tree Roses into Double Flowering Thorns, etc.

A G. Gulley remarked that tree agents should be considered under two heads, authorized agents of nurseries (who are, usually, as reliable as the nursery they represent), and agents sent out by dealers who, usually, sell fine trees, because they "take," but whose most important stock in trade is labels and lead pencils. The gist of the conclusion seemed to be, "know just what you want, accept nothing else, and deal with the nursery direct."

On Wednesday morning an essay was read by J. N. Stearns, of Kalamazoo, on "Preparing Fruit for Market." Neatness, taste and honesty were commended as profitable, in both the essay and subsequent discussion.

Professor A. J. Cook, chairman of the standing committee on entomology, as his report for the year, gave an exhaustive paper on the "Grape Phyllox-

era," in which he expresses the suspicion that this parasite may prove to be the cause of the black-rot of the fruit.

The orchard committee submitted their report. The awards will be found in the histories of the counties in which they occur.

"The Nutritive Value of Fruit as compared with other Foods" was the subject of a paper by R. F. Kedzie. After an analytical consideration of the constituents of fruit and of the substances required to maintain and build the human body, he adds: "According to one of the best English authorities, an egg, weighing seven hundred and ninety-four grains, and containing seventy-seven grains of albuminous matter, is equivalent in nutritive power to seventeen ounces of cherries, twenty-two ounces of grapes, thirty ounces of strawberries, forty ounces of apples and four pounds of red pears."

"They are chiefly of value for the soothing influence of the pectin and gum they contain, for the presence of free acids and alkaline salts, their aroma (to which much of their refreshing quality is due), and the varying amount of soluble matter present. Those fruits that seem to melt in the mouth contain a large amount of soluble matter." "While fruits are not in themselves very nutritious, they assist greatly in the digestion of other foods, and are second in importance only to more nutritious foods. They are the 'open sesame' to good health, without which life is not worth the living."

The report of the secretary for 1877 was then read in which, beside his work proper, some account was given of his operations prior to the commencement of his term of office, and which became necessary in consequence of the illness of his predecessor, Mr. Thompson. It also contained a statement of the efforts made to secure the use of suitable rooms in the new capitol.

The reports of the general superintendent at the State Fair, together with those of the division superintendents, were next read.

The following persons were then elected officers of the society for the ensuing year:—

President—T. T. Lyon, South Haven.

Secretary—Charles W. Garfield, Grand Rapids.

Treasurer—Samuel L. Fuller, Grand Rapids.

Members of Executive Board—W. K. Gibson, Jackson; E. F. Guild, East Saginaw.

Also a Vice-President for each fruit county.

Mr. Fuller declined the office of treasurer, whereupon the society elected S. M. Pearsall, of Grand Rapids, to that position.

The afternoon exercises were closed with a paper by T. T. Lyon on "Home Orchards *versus* Market Orchards," in which the tendency of planters to put mere market qualities before all others in selections for the family was combatted. Modification of premiums lists and the need of a State catalogue were suggested as means of obviating such tendency.

Mrs. M. P. A. Crozier opened the Wednesday evening session with a paper on "Farm Adornment," which pretty fully covered the ground of tree, plant and flower culture about the farm and residence.

This was followed by a paper on "The Work of the Farm."

Byron Markham followed with an essay on "Markets."

Judge Ramsdell, of Traverse City, then addressed the audience on "The Grand Traverse Region as a Fruit Country." He defined this region as "bounded on the north and west by Lake Michigan, on the east by the merid-

ian line, and on the south by an indefinite line running through the counties of Manistee, Wexford and Missaukee." He takes issue pointedly with the conclusions of Dr. Rominger, in the third volume of the Geological Survey of Michigan, as to the agricultural and horticultural capacities of this region, entering into a somewhat extended consideration of the geological origin of its soils, together with its topography and its climate.

This was followed by a paper by the secretary, entitled "How Shall we Experiment," treating the subject somewhat exhaustively.

The committee on plants and flowers reported fine exhibits from the establishment of the late John Suttle, from J. Sharp & Son and from William Rowe.

Two hundred and fifty plates of apples, several plates of pears and grapes, including Iona, Kalamazoo and Owosso, a sample of cranberries and several cans of peaches, plums and vegetables. An Angouleme pear, grown by Hon. J. B. Johnson, of Nevada City, weighing two pounds and five ounces, was shown by E. Buell, of Kalamazoo.

The Owosso grape shown by C. F. Goodhue, of Owosso, is thus described by him: "The Owosso is a chance seedling. We have the Salem growing side by side with the Owosso. We find the berry very much like it, but not like it in any other respect. The Salem is a few days earlier than the Owosso, the vine is quite tender, while that of the Owosso is very hardy, more so than the Concord, and a bountiful bearer. The Salem is liable to mildew. We have never known the Owosso to mildew.

S. W. Fowler, of Manistee, gave an address on that vicinity as a fruit region. The business of fruit culture was comparatively new and orchards have in some cases failed from neglect, while others properly cared for have succeeded. Plums succeed perfectly, and the same is true of strawberries.

H. Dale Adams followed with a short paper on "My Flower Garden," in which also he gave some attention to the growing of vegetables.

Judge Ramsdell followed with a series of appropriate resolutions, after the adoption of which the society adjourned to meet at Allegan in February, at the call of the proper officers.

The report of R. F. Kedzie, meteorologist for the society, states that the temperature of the year was slightly above the average. The lowest temperatures at the Agricultural College were—9° in January and—14° in March.

The average rainfall at the college for thirteen years is 30.47 inches. The average of 1877 is 35.47 inches, or five inches above the average.

At a meeting of the executive board held at Jackson on January 3d, 1878, it was determined that not less than five specimens should thereafter constitute a plate of fruit at the society's exhibitions.

At the session of the board held on the following day the finance committee recommended that the secretary's salary be fixed at \$600 per annum, which was adopted.

The treasurer was instructed to invest such life membership moneys as should come into his hands, in government bonds, until he shall be able to secure better rates of interest on ample real estate security.

The holders of old diplomas and life memberships were authorized to exchange them for the new ones, about to be issued, upon the payment of fifty cents to cover expense of printing, etc.

N. Chilson was deputed to effect a settlement with H. Dale Adams, former treasurer of the society, to receipt for the funds due from him, and to transfer the same to the present treasurer, S. M. Pearsall.

The State Pomological Society convened at Allegan for its winter meeting February 13th to 15th, 1878.

On the evening of the 13th the meeting was called to order by the president.

Encouraging letters were read from New York, Canada, and several localities in Michigan; also a communication from the Commissioner of Agriculture at Washington, through Governor Croswell, inquiring if the society could send any pomological exhibits to Washington to go to the Paris exposition.

A very cordial address of welcome was made by General B. D. Pritchard, which was responded to by the president.

J. P. Thompson, Secretary of the Michigan State Agricultural Society, then gave an address upon "What Constitutes the Fruit Belt of Michigan," saying that many claim that in some degree the lake influence reaches the whole peninsula; and, in that sense, the fruit belt includes the whole; although, in a more limited sense, it may be held to include merely the counties along the lake shore. The views of residents of seventeen counties were given to illustrate the ideas put forth by himself. To these were added the views of many of those present; but without eliciting a concise answer to the question of the essayist.

Lyman A. Lilly gave the next paper upon "Tree Planting for Farm and Roadside," in the course of which he considered the subject in the light of climatology and meteorology as well as in that of horticultural improvement and home ornamentation.

On Thursday morning the session was delayed to allow time for the arrangement and examination of the fine display of fruit upon the tables.

The first paper was read by J. N. Stearns, of Kalamazoo, on "Winter Protection of Nursery Stock," the protection proposed being by heeling in, in cellars prepared for the purpose. The essay elicited many questions and considerable discussion.

Professor Cook followed with an address upon "Leaf Rollers." This address was prompted by the receipt of a letter from Mr. Bidelman, of Coldwater, respecting an insect that was destroying a fine orchard in that county. At a later date the insect in question was determined to be the canker worm.

While on this topic L. L. Lance, of Glenn, brought out a discussion upon the codling moth and their destruction by birds. He condemned the sap-sucker as injurious to the trees.

Professor Cook followed up the discussion upon the codling moth and suggested the use of bands as the best known means of destruction at present.

Professor Beal, at the college, had been using the bands under rather discouraging circumstances, as an orchard across the street is wholly neglected.

The discussion took a wide range, including several other insects, attacking various kinds of trees.

H. Dewey, of Allegan, followed on the subject of "Growing Roots for Stock."

And this was followed by a paper read by Miss Elliott, of Grand Rapids, on "Little Things."

On Thursday afternoon the question box was opened and several questions were referred and briefly answered.

An essay on "Keeping Grapes" was read, from the pen of S. B. Peek, of Muskegon. He described his process to be "spreading the bunches upon racks until they became so shriveled that the juice will not ooze out on

breaking the skin, and then packing them away to prevent farther exposure to the air."

"Marketing Fruits" came up for discussion upon the report of T. T. Lyon, as chairman of a committee appointed at the annual meeting to report at this time.

The substance of Mr. Lyon's share of the report is contained in seven rules, as follows:—

1. Every package of fruit intended for market should be so put up as not to mislead the buyer as to its actual quality.

2. The grades of fruit, as to size, should each have its distinguishing mark, as, for instance, the lowest may be known as x, and others xx, xxx, etc., and as far as practicable, the name of the variety should appear upon each package.

3. The name of the packer (or other responsible person) should be so placed upon each package, in connection with the designation of the grade, that the fruit cannot be re-packed, or otherwise tampered with, without defacing such name and designation, or, in some manner, betraying the fact of such interference.

4. Smaller shippers, at least, should so far associate their operations as to enable them to employ a common brand or trade mark, and by so doing secure a recognized standing in their chosen markets.

5. Each locality (or if practicable, association of localities), should establish, at the point to which their shipments are to be principally sent, a depot for the same, or otherwise select a commission house or an association of houses, to which all their shipments shall be consigned, such arrangement to continue during the season, and from year to year, unless essential considerations shall compel a change.

6. Shippers should adhere strictly to the established preferences of their chosen markets as to the character and size of the packages to be employed.

7. The ripeness of fruit, when packed, should depend upon the length of time it is to be upon the road, the character of the transportation and the amount of handling to which it is to be subjected. Except in the case of pears, it should be as nearly ripe as shall be consistent with the ability to bear the treatment to which it is to be subjected.

John Whittlesey, of St. Joseph, Joseph Sterling, of Monroe, J. G. Ramsdell, of Traverse City, members of the committee, together with B. Gott, of Arkona, Canada, each submitted suggestions on the subject at greater or less length.

Mr. Williams inquired how, in accordance with rule 3, the name could be so attached that the opening of the package will deface it.

The reply was by using it as a fastening (similarly to the use of internal revenue stamps).

S. H. Comings, of St. Joseph, followed with an excellent, practical and exhaustive paper on "Cranberry Culture for Michigan," in which reference is made to the extent and present condition of this interest in Wisconsin, with some comparisons of the conditions of the two localities.

L. L. Lance, of Allegan county, next considered the question, "What kills our Peach Trees," which he thought due to continuous drafts of extremely cold air.

The discussion following elicited other opinions, but nothing tangible was presented.

Emmons Buel, of Kalamazoo, opened the Thursday evening session with a paper on "Gathering and Preserving Winter Apples." He recommended

hand picking, assorting into grades, placing at once in barrels and keeping at a uniform temperature and wrapping each fruit in paper.

During the ensuing discussion Mr. Hanford, of Bristol, Indiana, recommended the Cope preserving house for the keeping of winter fruit.

"Cross Breeding of Fruits" was then considered by Professor Beal, who gave a description of the process of artificial fertilization, with the precautions requisite to insure success. He also quoted a series of opinions respecting the amount of influence likely to be produced by each parent upon the character of the offspring, and referred to the opinions of Darwin, as given in a recently published work.

Some discussion followed the reading of the paper, when the following resolution was adopted:—

Resolved, That it is the choice of the members of this meeting that the executive board of the State Pomological Society offer suitable premiums for new seedling or hybrid fruits, suited to general and profitable cultivation in this State, after they have been fully proved to the satisfaction of a competent committee.

M. B. Williams then gave an essay in reply to the question, "How can we Maintain the Fertility of our Orchards?" in which, after barnyard manure, he recommended lime, ashes, salt and leaf mould.

Others suggested the application of clay, the plowing under of rye.

A long discussion arose respecting the sweating of fruits after gathering.

G. H. LaFleur read an essay on "General Orcharding," detailing many of the mishaps and mistakes into which illy informed orchardists are liable to be led, and pointing out the better way.

J. E. Day, of Romeo, followed with an essay on "What shall we do with our Old and Injured Apple Orchards?" This was followed by a lively discussion, the outcome of all being that it would be necessary to determine each case upon its own merits.

The report of the committee on fruits exhibited was then received. After mentioning the various exhibits and exhibitors, including eight varieties of grapes from S. B. Peck, of Muskegon, kept by the process described in his paper on that subject. Mr. A. G. Gulley, the junior member of the committee, goes on to say: "Our chairman (E. Buel), who is a little modest, at least he says so, did not wish to speak of his Red Canadas, so I do it for him. He always produces some much larger and finer than any of the rest of us can show. How he does it I do not know, but I do not wonder he puts it above all other winter apples."

The committee on flowers highly complimented Mr. H. Dewey, who was the only exhibitor of plants and flowers.

S. W. Fowler, of Manistee, then put in a plea for fruit, in which he referred to our State motto as a prophecy of the future, of which those who originally adopted it had little conception. He also treated the subject dietetically and medicinally.

A discussion arose on the question, "In what Season Shall we Plant our Fruit Trees in our Climate?" which ended as it began, with a division of opinion.

The usual complimentary resolutions were adopted, together with one thanking the secretary for the prompt issue of the volume of Transactions, also one expressing the gratitude of the society to Edwy C. Reid for his efforts to render the convention pleasant to all concerned.

An essay by Mrs. S. Smith, of Walker, Kent county, was read by the sec-

retary, eliciting a good deal of applause. It was entitled "Our Homes." It dwelt upon the making of homes, the creation of pleasant surroundings for them, and the creation of a convenient, pleasant and cheerful interior, provided with food for the mind as well as for the body.

The final adjournment was delayed by the arrival of a box of grapes in excellent condition, with the accompanying letter from E. Bradfield, of Ada:

"I see by your circular there will be a discussion on keeping grapes, and I send four or five varieties by express, packed in the same manner and in the same material in which they were put up last fall in large boxes. I use hard wood saw-dust, which was taken from my ice-house and dried in the oven. The excellent condition of the half-ripened Iona illustrated the fact that the keeping quality of a variety does not depend entirely on its perfect ripeness. The imperfections in the Iona bunches are due to Professor Cook's friends, the robins. They are very forbearing toward the other varieties, but scarcely leave a perfect Iona bunch. Like the writer, they seem to have Iona on the brain."

The society adjourned to meet at Jackson at the call of the proper officers.

On June 18th to 20th the summer meeting of this society convened at Jackson and was called to order by the president. G. M. High was present as a delegate from the Ohio Horticultural Society; also W. H. Ragan, from the Indiana Horticultural Society.

The reading of numerous reports by the secretary showed that a frost early in May had seriously injured the grapes and small fruits, especially strawberries, but with little injury to the larger fruits except in unfavorable locations.

A chapter of horticultural experience by Messrs. J. Austin Scott and J. D. Baldwin, of Ann Arbor, served to bring out the capacity of that region for fruit growing, and especially for peach culture, in which particular they believed it to be fully equal to the lake shore.

"Gathering Fruit" was the subject of a few moments' discussion.

Mr. Baldwin stated that there was a shrinkage of fifteen per cent in apples from the first sweating after gathering.

The pear should be picked before maturity and house ripened.

All fruit should be picked with the stems perfect.

A report was received from T. T. Lyon, chairman of the committee on the proposed fruit catalogue, giving a list of the varieties of small fruits proposed to be introduced into such catalogue. These underwent a discussion as to the relative values to be given them.

At the evening session a letter was read from N. A. Beecher, of Flushing, giving his experience in orcharding, giving a not very clear character for hardness in his locality to several of the popular favorites, such as Esopus Spitzenburgh, Roxbury Russet, Baldwin and Rhode Island Greening.

"Fruit as a Part of a Good Living, When and How to Eat it," was the next subject, which was opened by J. P. Thompson in an exhaustive discourse, which was followed by a discussion which, however, was all on one side—that of fruit.

A paper upon "Practical Education" was presented by M. C. Simpkins, of Branch county, who said the question of the hour among professional educators is, How to bring the schools abreast the fourth quarter of the nineteenth century. After numerous hits at the lack of a knowledge of practical affairs by both teachers and pupils, even in our higher schools, he made

the following thrust at this society: "Members of the Pomological Society of Michigan, you represent one of the all important interests against which the schools of our State are virtually closed, and if their doors are ever opened in that direction, you, not we, must open them."

This brought the society to the hour assigned to the discussion of "Horticultural Education in Michigan, and Experimental Horticulture at the Agricultural College."

Judge Ramsdell was expected to lead the discussion, but was necessarily absent, merely sending a letter instead, the reading of which was followed by a paper from T. T. Lyon, upon "The Educational Needs of Pomology, How shall they be provided for, and Where?" Suggesting, among numerous other things that, should climate or other circumstance prove an obstacle to the proper teaching of pomology at the college, it could be taught in part or in whole elsewhere, or the usual process of literary institutions in the conferring of additional degrees could be employed by requiring a certain amount of physical practice and the preparation of a thesis as proof of the requisite proficiency.

The paper closed with the remark: "We cannot conceive a justification short of absolute impracticability for the neglect or failure of the State to provide for the building up and encouragement of an interest so important in its pecuniary and commercial results."

Professor Beal followed with a paper entitled, "Teaching Horticulture and Horticultural Experiments at the Michigan Agricultural College," in the course of which he carefully detailed the modes and processes of instruction during the term in this department.

A somewhat lengthened discussion followed, which was participated in by President Abbot, F. M. Holloway, J. Webster Childs and Eugene Pringle, and the subject was closed by a letter from W. W. Tracy, of Old Mission, on "The Kind of Work Needed in Horticulture," urging that we have gained very little in horticulture beyond what was known one hundred or more years ago, and that professional work at the college should look rather to the elaboration of new and important principles and results than to the telling and re-developing of matters that we are all capable of working out for ourselves.

On Wednesday morning the subject of "Forestry for Michigan" was before the society for discussion.

After a few remarks by the secretary, Professor Beal offered a paper answering the questions, "Shall we Begin to Grow Plantations of Trees?" and "How Shall we Make the First Efforts?"

After answering the first question affirmatively, he remarks: "The best sorts are going fast; especially is this true of black walnut, white ash, tulip tree, hickory, the best clear pine, rock elm, white oak, etc.," and follows with various suggestions as to kinds and methods.

O. R. L. Crozier, of Hudsonville, followed with a paper on the same general subject, and this again was followed by

H. S. Rogers, of Volinia, in continuation of the discussion.

Several cases were mentioned of forest plantations already commenced.

The afternoon session was opened by reports from local horticultural societies; such reports were made by the Coldwater Horticultural Club, the Oceana and Lake Shore Horticultural Society, the Washtenaw Pomological Society, the Lake Shore Pomological Society, the Grand River Valley Horticultural Society and the Volinia Farmers' Club.

Mr. Stearns, of Kalamazoo, opened a discussion upon the question, "How Far Shall We Go in the Attempt to Create a Demand for Fruit of the Best Quality?"

Mr. Stearns thought it safer to go slow in such an effort, but thought favorably of working in that direction.

Mr. M. B. Williams, of Saugatuck, thought little could be effected in that direction.

The discussion called out a great variety of opinion, generally, however, in the direction of at least a gradual improvement in the quality of fruits to be grown for market.

Mr. High, of Middle Bass, said: "We grow grapes for the money, but, at the same time, quality is somewhat looked to. The Catawba is our best grape, the Delaware next. The Concord is third-rate."

A discussion followed on "Injurious Insects." The canker-worm, curculio, grape vine flea beetle, and the snowy tree cricket, each came under discussion, together with the various modes adopted for their destruction.

"Pomology in the State Capitol," was the first subject of Wednesday evening's discussion.

The present state of the case was quite fully stated by the secretary.

Mr. Knapp and Mr. Pringle, of Jackson, spoke favorably of the arrangements at the capitol of Georgia for this purpose, and W. H. Ragan stated that agriculture and horticulture had a home and ample rooms in their new capitol.

A committee, consisting of W. K. Gibson, T. T. Lyon, F. M. Holloway, and J. P. Thompson was appointed to devise a plan and report.

The next subject on the programme was "Esthetics in Horticulture," on which subject a scholarly and interesting paper was read by W. K. Gibson, of Jackson.

On Thursday morning the committee on a plan in the State Capitol, reported as follows: "That they have had the matter under consideration, and recommend that the society accept the room assigned, as the best that can be had at present, and that the whole matter be referred to the executive board, with the suggestion that they jointly, with the State Board of Agriculture and the State Agricultural Society, institute such measures as they shall deem best calculated to secure to the agriculture and horticulture of the State a position in this respect commensurate with their real importance relatively to other interests of the State."

The committee on fruits exhibited report a large display of fruits, including strawberries, currants, cherries, plums, peaches, nectarines, apples (grown in 1877). Also a display of dried fruits by the Williams process.

The committee on plants and flowers report very fine exhibits, in all thirty plants, from five exhibitors; also bouquets from two others.

Resolutions offered by F. M. Holloway were adopted proposing fuller concert of action between this and local societies.

R. Haigh, jr., of South Haven, then read a paper on "Ornamentation of City and Village Lots."

The discussion which followed was highly complimentary to the essay.

An invitation to hold the next annual meeting at Paw Paw was accepted.

After the adoption of appropriate resolutions the society adjourned.

The annual union fair of the State Agricultural and Pomological Societies was held at Detroit on September 16th to 20th, 1878.

In the department in charge of the State Pomological Society there were above twelve hundred entries.

"The executive board of the State Pomological Society, quite early in the year, undertook the task of re-arranging the premium list for the purpose of making the annual exhibit more instructive, and also to secure, if possible, a greater exhibition of skill in choice of varieties and a more definite expression of opinion regarding the comparative value of varieties on the part of both exhibitors and committees."

"The principal changes were instituted in the departments of collections, which were placed in the hands of President Lyon for revision. His report was unanimously adopted, and although a year's experience has developed a necessity for some amendments, still there was certainly a great improvement recognized over any previous arrangement of premiums."

Divisions A and B, as here given, will illustrate the changes made.

LIST OF PREMIUMS.

FRUIT DEPARTMENT.

Division A.—General collections of fruits, not less than five specimens of a variety.

NOTE.—In awarding premiums upon any and all exhibits of fruits, committees are instructed to exclude any and all unnamed and incorrectly named specimens, and to consider: 1st. The value of the varieties for the required purpose. 2d. The color, size and evenness of the specimens. 3d. Their freedom from insect marks and other blemishes.

Committees are further instructed to govern their investigations in accordance with the following rules:

1. That the occurrence in a collection or exhibit of very large and showy, but comparatively worthless varieties is to be considered as a discredit to such collection or exhibit.

2. That the true or legitimate purpose of the premiums offered is to draw out the views of both exhibitors and committees as to the relative values for the purposes specified, of the varieties included in these exhibits.

3. That the society desires to encourage the planting of only a sufficiently large variety of sorts for the desired purpose. Hence, it is important that the committees in their reports specify, in the order of their value, the varieties upon which the determination of the awards is based.

4. That *useful* and *valuable* varieties only are expected to influence their awards, while indifferent sorts, even though large, showy or attractive, should not, for these reasons alone, be held to add to the value of an exhibit, except, possibly, as a means of education.

5. In classes three, four and five of Divisions B, C, D, E and F, the purpose is to bring out prominently before the public the views of both exhibitors and committees as to the varieties most esteemed in this State for strictly market purposes. It is, therefore, essential that committees be full and explicit in their reports of awards in these classes.

6. In all cases in which duplicate plates of any variety shall appear in a collection, it shall be the duty of the committee to select the best plate of such variety in such collection, and to strictly exclude from the competition any and all other specimens of such variety.

Class 1. Most useful and best collection of fruits, by a society, grange or municipality, selected for dessert and family purposes, giving a succession throughout the usual season, superior quality, delicacy of texture and beautiful appearance (in the order named) to take precedence of profitableness and size. First prize, \$16.00; second prize, \$10.00; third prize, \$5.00.

Class 2.—Most valuable and best grown collection of fruits exhibited by a society, grange or municipality, selected strictly for market purposes, productiveness, suitable size, handling qualities and succession throughout the usual season, being the leading considerations. First prize, \$12.00; second prize, \$8.00; third prize, \$4.00.

Class 3.—Most useful and best grown exhibit of fruits grown by the exhibitor; requirements otherwise as in Class 1. First prize, \$16.00; second prize, \$10.00; third prize, \$5.00.

Class 4.—Most valuable and best grown exhibit of fruits grown by the exhibitor; requirements otherwise as in Class 2. First prize, \$10.00; second prize, \$8.00; third prize, \$4.00.

The committee in charge of the nomenclature of the exhibition is authorized to award to the most correctly named collection in the above Classes 1 and 3, a premium of \$10.00; also the same in the above Classes 2 and 4, a premium of \$5.00. Said committee may also, in its discretion, award a similar premium of \$5.00 in Class 1 in each of the Divisions B, C, D, E and F.

Division B.—Special exhibits of apples, not less than five of a variety.

Class 1.—Most valuable and best grown exhibit of apples by a society, grange or municipality, for general purposes, giving a succession. First prize, \$10.00; second prize, \$6.00; third prize, \$4.00.

Class 2.—Most useful and best grown exhibit of twenty-five varieties of apples for dessert and family purposes, grown by the exhibitor, giving a succession throughout the usual season, superior quality, delicacy of texture and beautiful appearance (in the order named), to take precedence of profitableness and size. First prize, \$10.00; second prize, \$6.00; third prize, \$4.00.

Class 3.—Most valuable and best grown exhibit of twelve varieties of apples for market, grown by the exhibitor, giving a succession during the usual season, productiveness, suitable size, handling qualities and general attractiveness, being the leading considerations. First prize, \$3.00; second prize, \$4.00; third prize, \$2.00.

Class 4.—Most valuable and best grown exhibit of six varieties of apples for market, without regard to succession, to be grown by the exhibitor. First prize, \$3.00; second prize, \$2.00; third prize, \$1.00.

Class 5.—Most valuable and best grown single variety of apple for market purposes, grown by the exhibitor. First prize, \$2.00; second prize, \$1.00; third prize, 50c.

Divisions C, D, E and F have the same offerings as in Division B, except that they apply respectively to peaches, pears, plums and grapes, and therefore need not be reproduced.

The society, under the authorization of James Vick, seedsman, of Rochester, N. Y., offered the following premiums, in addition to their regular list:—

For the best collection of cut flowers. First premium, \$20.00; second, \$10.00; third, \$5.00; fourth, floral chromo. These offers were open to amateurs only.

At this fair, for the first time, division superintendents were placed in charge of the several exhibits, each being constituted chairman of the viewing committees in the divisions under his charge.

The secretary in his report says: "In collections of fruits, there was never such a display before, there being nearly fifty collections of apples alone upon exhibition."

The annual meeting of the State Pomological Society convened at Paw Paw on December 3d to 5th, 1878, with a large attendance from abroad.

Professor Lazenby wrote from Ithaca, N. Y., suggesting "Marketing Fruits" as an important subject for discussion.

A. O. Winchester could not be present. He believed he had the first peach trees in Michigan affected with yellows.

Letters were read from N. Ohmer, of Ohio, S. W. Fowler, of Manistee, B. Gott, Arkona, Canada, Dr. Mattoon, Monroe.

Verbal reports of the fruit crop were generally favorable. N. H. Bitely, of Van Buren, and M. B. Williams, of Allegan, expressed much anxiety concerning the encroachment of the yellows.

J. N. Stearns, of Kalamazoo, opened the subject of "Horticultural Implements," several of which were described and commended.

T. T. Lyon described the scope and object of the fruit catalogue now ready, whereupon a committee was appointed to review the same and report.

At the evening session, in pursuance of a resolution of the meeting, the president appointed G. W. Lawton, M. B. Williams and J. J. Woodman a committee to make recommendations concerning the reconstruction of the present "Yellows law."

"Market *vs.* Amateur Orchards" was called up and extensively discussed with little apparent result.

"Arboreculture and Forestry" was the subject of a paper by George Taylor, of Kalamazoo, who treated the subject exhaustively, closing with the following description of a noble beech tree, "situated in the pleasure grounds at Newbattle Abbey, the seat of the Marquis of Lothian, near Edinburgh. Its height is one hundred feet, and the circumference of its branches is three hundred and sixty feet. The circumference of the bole at one foot from the ground is thirty-three feet, and at eight feet from the ground, twenty-seven feet. Its lower branches arch over until they reach the ground, when many of them assume an upright growth. Its exact age is unknown, but it is believed to have been planted in the sixteenth century."

Mr. J. D. Baldwin, of Ann Arbor, followed with a talk on "How shall we Utilize our Rainfall?"

The president being engaged with the committee on the fruit catalogue, the meeting was called to order on Wednesday morning by Vice-President Holloway, of Hillsdale.

C. Engle, of Paw Paw, opened the subject of "Orchard Cultivation and Fertilizers," and was followed by R. F. Kedzie, of the Agricultural College. The discussion took a wide range, nearly all, however, favored cultivation of orchards. Barnyard manure, ashes and lime were generally approved as fertilizers.

S. W. Dorr, of Manchester, treated the general management of orchards, followed by several speakers on the subject of clover and peas to be consumed on the ground or turned under as fertilizers.

The next topic—"Size *versus* Quality in Market and Family Fruits"—was opened by a short paper from Emmons Buell, who decided in favor of large specimens.

Professor Beal continued the discussion with a short answer to the question "What shall be our Rules for Judging Apples?" He remarked: "Without

regard to tree, variety or season, in selecting a model plate of apples, I would place great stress on the following points, about in the order and proportion there indicated. I would not include a wormy apple as worthy of notice in competition. First, quality, 10; second, condition, 10; third, form, 5; fourth, color, 5; fifth, size, 5."

"Under *quality* I include flavor and texture; under *condition* is included the presence or absence of the stem, calyx, scabs, bad specks, bruises, rubbed surface, fresh or wilted."

The professor reinforced his position by communications on the subject from John J. Thomas, Hervey Davis, Patrick Barry, and John A. Warder, and followed with a series of illustrative points and rules both general and special.

C. N. Merriman, of Grand Rapids, followed with a valuable paper largely devoted to the requirements of the markets, both American and English, containing, however, the error or misapprehension that the State Pomological Society, through its rules, treats extra size as a defect, which is only true in case of unevenness of size between specimens upon the same plate.

W. W. Tracy, of Grand Traverse, addressed the audience upon "Arranging and Marking Out Orchards," illustrated by charts and by the model of an implement employed to secure straight rows in planting the trees.

On the afternoon of Wednesday reports of the officers respecting the State fair were received, which were followed by that of the secretary, which was full of thoughtful suggestions.

A very full and valuable report was received from Professor A. J. Cook, as entomologist of the society who, owing to other engagements, was unable to be present.

The special committee on the fruit catalogue reported verbally, which report was accepted, and the catalogue adopted.

The following officers were elected for the ensuing year:

President—T. T. Lyon, South Haven.

Secretary—Charles W. Garfield, Grand Rapids.

Treasurer—S. M. Pearsall, Grand Rapids.

Executive Board—S. B. Mann, Adrian; George Parmelee, Old Mission.

Also the usual number of vice-presidents.

Jonathan Periam, of the Prairie Farmer, read an essay on "Winter Protection."

A letter from Nathan Shotwell, of Jackson county, was then read, urging action in the devising of methods for destroying insects, especially the codling moth.

At the evening session A. G. Gulley, of South Haven, opened the discussion on the "Yellows," giving the evidences on cure of the disease (the destruction of all infected trees). He supposed the almond tree might prove to be exempt from the disease and in such case might prove useful as a stock on which to work the peach; but even this hope is since found to be fallacious.

A letter from W. A. Brown, secretary of the Michigan Lake Shore Fruit Growers' Association, of Berrien county, was read giving a minute account of the origin of the disease so far as known, and of its introduction into this State, with its subsequent history here.

The Lawton Pomological Society had devised a series of eight questions, which were discussed, and, in part at least, answered in the course of such discussion.

On Thursday morning "Atmospheric Drainage" was considered by George Parmelee, of Old Mission, in a short paper, after which the report of the committee on apples was received, showing eighty plates of this fruit on exhibition, but betraying a lack of acquaintance with the society's recent practice in the fact that every plate had at least one apple with some disqualifying blemish. The committee add that their desire is to call attention to the want of proper care in selecting perfect specimens for exhibition. But, as nothing had been said previously to the meeting, the exhibitors naturally followed the general practice.

The committee previously appointed by the executive board, through its chairman, T. T. Lyon, reported that great care is needful in the selection and packing of fruits for so distant a market as that of Europe, and that it was of the highest importance that, for success in such undertaking, there be a direct steam communication from Michigan ports to that country.

The committee on miscellaneous fruits reported an exhibit of five plates of grapes and three of pears, also samples of sorghum molasses, apple butter, apple jelly, boiled cider and prepared tomato.

A seedling peach, said to have been of a rich yellow color, to have measured eleven and one-half inches in circumference and to ripen between Hale's and Early Crawford, was shown preserved in alcohol.

N. H. Bitely, president of the Lawton Pomological Society, presented a compilation of eight facts respecting the yellows, elicited during the discussions, from which he deduces the necessity of a stringent law, applicable to the whole State, and rigidly enforced, and requiring the destruction of all diseased trees and fruit.

C. D. Lawton suggested that we had evidently "reached the end of our rope," so far as present knowledge of this disease is concerned, and that our further hope must rest on the deductions of abstruse science (such as we have since gained through the investigations of Professors Burrill, of Illinois, and Arthur, of New York).

The committee in charge of the framing of a yellows bill reported progress and asked to be authorized to prepare a substitute and present the same to the Legislature without the necessity of submitting the same to the society, which was accordingly done.

On the invitation of Professor Beal, Lansing was fixed upon as the place for the next meeting, and, after the adoption of the usual resolutions, the society adjourned, subject to the call of the proper officers.

The State Pomological Society determined to issue a State catalogue of fruits at its meeting at South Haven, in June, 1877, and its first issue occurred in connection with its annual volume of transactions for the year 1878.

In the catalogue the varieties are numbered at the extreme left, and also at the left of the page occupied by the column of remarks, to avoid confusion in tracing the connection. Synonyms are introduced in a few cases only, and *italicised*. In the column devoted to descriptions, the distinguishing peculiarities of the fruit, with its season and origin, are more or less fully given by the use of abbreviations. In each of the columns headed use and value, the figures 1 to 10 express the gradations of value for the purpose to which the column is devoted, the first two columns having reference strictly to the quality of the fruit separately considered, and the third to all the qualities, whether of tree or fruit, that affect the question of profitableness. Under the head of locality, a sub-column is assigned to each of the five districts

into which the lower peninsula of the State is divided, such division being as follows, viz: 1st district, the eastern tier of counties from the southern boundary of the State northward as far as its capacity for fruit culture is known. 2d district, the mass of interior counties, omitting the tier along the southern boundary and those adjoining Lake Michigan. 3d district, the south tier of counties, omitting Monroe on the east and Berrien on the west. 4th district, the lake shore counties, from the south line of Berrien to and including Ottawa county. 5th district, the counties adjacent to Lake Michigan and its bays, from the south line of Muskegon county as far north as their capacity for fruit culture is known. In these columns a * indicates that the variety which it represents is known to succeed in the district, ** that it is especially valuable, and a † that it is on trial and found promising. Many kinds of very little value are added for the purpose of showing by the low values given them, and by remarks in the column for that purpose, that, though more or less grown in the State, their further cultivation is not intended to be encouraged. The leading advantage to the fruit culturists of the State sought in this catalogue is to supply all who may wish to plant with a distinct purpose in view, the means of selecting wisely with reference to such purpose, from the varieties which shall have been properly tested in the State, and found best adapted to the special purpose they shall have in view.

The latest edition of Downing's "Fruits and Fruit Trees of America" was adopted as authority on nomenclature but subject to modification in accordance with the rules of the American Pomological Society.

The catalogue occupies fifty-five pages of the volume of the society's transactions for 1878 and was revised and republished in 1879, since which it has only been revised and republished in alternate and odd years.

The winter meeting of the State Pomological Society was held at Lansing, on February 18th to 20th, 1879. Tables for fruits were arranged in the upper corridor of the capitol, on which was displayed over two hundred and fifty plates of apples.

The sessions were held in the audience-room of the State Pioneer Society.

The reports read at this meeting indicated a lower temperature in the southern tier of counties than farther north. Reports so far indicated no serious injury to the prospective fruit crop.

On Tuesday evening N. Chilson, of Battle Creek, proposed a plan for an exhibition hall to accommodate fruits and flowers adequate to accommodate five thousand plates of fruits, besides plants and flowers, the hall to be lighted wholly from above.

The plan of Mr. Chilson was accepted and referred to the executive board.

This was followed by a paper on "The Ornamentation of Country School Grounds" by W. C. Latta, of Mason. The paper treated the subject quite fully and elicited much discussion, but was objected to by some as not within the scope of a pomological society's work.

On Wednesday morning the topic first considered was: "How Good a Vegetable Garden Can the Farmer Afford?"

The subject was opened by an essay from Eugene Davenport, of Woodland, Barry county, who, after its consideration, answered the question as follows: "As soon as he knows how to keep it he can afford an indefinitely good one, and can keep such an one cheaper and easier than he could a poor one before."

A prolonged and interesting discussion followed the reading of the essay,

which was assisted by a renewal of the objection that the subject is without the pale of pomology, whereupon a motion was made that an informal vote be taken to indicate the preferences of those present as to a change of the name of the society to horticultural.

Such vote was accordingly taken, the result being fifteen votes in favor of the proposed change and eight in favor of retaining the present name.

A number of those present having expressed a wish to discuss the subject of "Peach Tree Yellows," Judge Lawton, chairman of the committee, appointed at Paw Paw to draft a bill for presentation to the Legislature, read the bill as prepared, adding that the bill was already in the hands of the house judiciary committee, who will gladly meet a committee of the society to consider it.

After a discussion of the features of the bill and the reading of an argument in its favor from C. D. Lawton, commendatory resolutions were adopted and a committee consisting of George W. Lawton, N. H. Birely, W. J. Beal, H. C. Sherwood and S. B. Mann was appointed to confer with the committee of the House of Representatives respecting it.

The Wednesday afternoon session opened with a paper entitled, "Care of the Orchard," by Nathan Shotwell, of Concord, Jackson county, treating of pruning, grafting, selection of varieties, etc.

Professor W. J. Beal followed on "The Acclimation of Plants," treating the subject very fully and quoting largely from various scientific sources, with the balance of evidence largely against the practicability of acclimating plants except through reproduction from seed.

F. A. Gulley gave a paper in response to the query, "Shall We Use Hedges for Farm Fences?"

In quoting some statistics and estimates of the cost of fencing in Michigan, he states: There are 32,000 miles of road fences in the State, costing \$ 0.-000,000. He finds that fences cost the farmer more than twice as much as his taxes.

In opening the subject of hedges, the ubiquitous tree agent comes in for a few remarks, crowned with the well nigh stereotyped advice, "Never buy anything of any traveling agent."

Both the address and the subsequent discussion bore decidedly against the success of hedges, as usually managed, and the discussion closed with the offering of a resolution recommending the planting of hedges for fences in Michigan, which was laid on the table till the June meeting.

The secretary read an invitation from the Oceana and Lake Shore Pomological Society to the State Pomological Society to hold its summer meeting at Pentwater, which was referred to the executive board.

This was followed by a discussion on the question "Shall we Aim to Grow Large Apples?" led by E. F. Guild, of East Saginaw, who decidedly preferred the large specimens. The discussions, however, developed differences of opinion as to market preferences in this particular.

Mr. Dorr, of Manchester, closed the discussion with a remark which seemed to command general approval: "I believe in thorough cultivation. The better culture the larger apples, the larger apples the quicker market, and the quicker market the fuller pocket."

"Methods and Advantages of Collecting and Preserving Insects," was treated by Professor Cook, who described and in part illustrated it with the implements in hand.

Professor Whitney reported resolutions looking to the offering of premiums for improvement of country school grounds and urging local societies to give more attention to improving public grounds, school yards, and roadsides, which resolutions were adopted.

On Wednesday evening the report of George Parmelee as delegate to the annual meetings of the Indiana and Illinois Horticultural Societies, giving some account of their manner of conducting their meetings, was read and accepted.

Mr. Thompson inquired what other apples come early into bearing like Wagener.

Replies were that Wagener heads the list, followed by Keswick Codlin, Maiden's Blush, Early Harvest, Oldenburg, Jonathan, Sweet Bough and Primate.

President Lyon asked, if all apples save one were to be stricken from our lists, which one would we save for Michigan?

In reply, Baldwin, Northern Spy, Wagener and Rhode Island Greening were named by different persons.

Judge Lawton inquired what precaution should be taken while pruning peach trees to avoid disseminating yellows.

Passing the implement through the flame of an alcohol lamp after finishing each tree, and also dipping it in crude carbolic acid were mentioned.

"Can Township and District Fruit Shows be Made Profitable?" was the last topic of the evening, the general verdict being in their favor.

The Thursday morning session was opened by C. N. Merriman with an address on "Mistakes in Selecting Orchard Sites." After the address of Mr. Merriman the discussion widened greatly, taking in drainage, aspect, elevation and shelter.

A committee had been appointed at the close of Mr. Eugene Davenport's paper to report a list of vegetables for the farm garden, who now reported such list.

The last topic for discussion was "Legislation for Fruit Interests."

The subject was considerably discussed and a committee appointed to confer with the committee of the Legislature respecting the taking of orchard and fruit statistics in connection with the census.

On Thursday evening the report of the committee on fruits exhibited enumerate three hundred plates of apples made up of sixty-three varieties; also four of grapes and a collection of canned fruit.

Following the committee's report a paper was read by President Lyon on "The Labors and Needs of the Society," in which the work done and that awaiting accomplishment are contrasted with the means for their performance, and reasons given why horticulture, especially in Michigan, should be regarded as an interest of State concern, and entitled to a commensurate position among such interests.

George Taylor followed with a paper on "Forestry," supplementary to the one on that subject read by him at the recent annual meeting.

A resolution was passed recommending the offering of premiums for wind-breaks and advising the same on the part of local societies.

Resolutions were also passed asking an increase of the number of volumes of the society's transactions.

After the adoption of suitable resolutions of thanks the meeting adjourned.

The summer meeting occurred at Muskegon on June 17th to 19th, 1879, with a full attendance from abroad.

The society was called to order by the president on Tuesday evening.

The reports, both by letter and orally, were of an encouraging character, so far as fruit prospects are concerned.

"The Ideal Market Strawberry" was the first subject that came up for discussion.

With W. A. Brown it was the Wilson.

T. T. Lyon thought that to decide this question we need to consult, first the grower, second the buyer, third the consumer. Anybody can grow Wilsons, but it requires experience to grow Triomphe de Gand, hence the greater profit in the latter when well grown.

On Wednesday morning the discussion of "The Ideal Market Strawberry" was resumed, and after a good deal of discussion the following resolution was adopted:

Resolved, That we have not as yet reached so high a standard of excellence in the strawberry as to be able to name any variety as "An ideal market berry."

The next topic was, "What is the Ideal Family Strawberry, and What Sorts Come Nearest to it?"

This question was discussed in a short paper from B. Hathaway, to the effect that it should be a sure producer, of fair size, moderately firm, and the plant satisfactory. In response to an anticipated query, he thought the Michigan such a variety.

R. F. Johnstone pointed to a plate of Jucundas as coming, in appearance at least, as near to his ideal as any up in the table.

The Crescent was commended as a market variety by the few who had tried it.

The strawberry list in the new fruit catalogue was then reviewed. The Crescent, Centennial, Shirts, Marvin and Windsor were added and the grading of several sorts changed.

The Wilson had been marked ten in the market column. This, after a long, earnest discussion, was reduced to nine.

At the opening of the afternoon session several seedlings were referred to the fruit committee with instructions to propose names, if thought worthy.

H. S. Tyler, of Muskegon, read an essay on "The Influence of Stock upon Cion," detailing much of personal experience and advancing the opinion, in conclusion, that, by continuous re-grafting, a variety may ultimately lose its identity.

The next topic was "The Position of the Baldwin Apple in Michigan."

The discussion evolved wide differences of opinion and experience respecting this variety. Its lack of hardiness is a serious drawback in very many localities; but where it proves sufficiently hardy its vigor and productiveness render it a favorite.

To nurserymen the fine habit and great vigor of the young trees are especially satisfactory.

A few larvæ upon vine leaves were shown by E. Bradfield, which Professor Cook identified as the larvæ of the grape vine flea beetle, giving their natural history, and adding that by sprinkling the buds in May with Paris green and water the beetles may be killed and the evil nipped in the bud. Later, the dust of lime or Paris green will kill the grubs.

Mr. S. B. Peck, one of the oldest members of the society in point of membership, and the oldest in years, read an essay entitled, "Muskegon and the State Pomological Society, expressing a high opinion as to the efficiency and

usefulness of the latter, and of the horticultural possibilities of the former.

A short discussion was had on "Lawn Making."

Professor Beal said the requisites for a satisfactory lawn are deep, properly graded soil, and frequent mowing. Sow thickly with June grass only. Top dress every year.

"Testing varieties" was the next subject discussed.

Professor Beal mentioned several essential particulars requisite to render tests of practical value, mentioning some of the difficulties encountered at the Agricultural College in the prosecution of this work.

The subject was further discussed by Messrs. Garfield, Gulley, Johnstone and Lilly.

On Thursday morning an invitation was accepted from Mayor Holt to visit his museum, which was accepted for eleven o'clock.

A letter was read from C. D. Lawton, of Lawton, speaking of black-cap culture in that vicinity and of the recent appearance there of the rust, and inquiring if there is a known remedy aside from digging and burning affected plants. The letter also gives information respecting grafting and pruning; also hints respecting varieties of desirable apples, concluding with commendations of the newly issued State fruit catalogue.

The committee on fruits report a large exhibit of strawberries, also a number of exhibits of apples, yet in good condition for so late in the season. Peach, plum and currant branches were also shown, loaded with green fruit.

The committee on new varieties of strawberries reported three alleged seedlings as worthy of trial, which were named respectively, Shirts, Marvin and Windsor--the first two from the names of the originators, and the last from the name of the town in which it is alleged to have originated. This last proves so perfectly identical, both in fruit and plant, with the Champion, one of its alleged parents, as to afford occasion for doubt whether a mistake has not been made.

The committee on plants and flowers report exhibits from C. A. Dutton, of Holland, Mrs. Charles Culver, of Laketon, C. L. Whitney, of Muskegon, Thomas Wilde, of Berlin, and Henry Baker, of Muskegon.

It was resolved to invite the American Pomological Society to hold its next meeting (1881) in Michigan, and the president was appointed a delegate to its approaching meeting at Rochester, New York. Adjourned.

At a meeting of the executive board, held at Kalamazoo, on June 27th, 1879, the secretary was authorized to arrange with C. F. Wheeler, of Hubbardston, for the introduction into the volume of the society's transactions of some account of the native and introduced flora of our State, which will be found in the volume for 1880.

With the hope that adequate room for the purpose, in the new State capitol, would be accorded to the society, W. K. Gibson, of Jackson, was deputed to open correspondence with reference to the securing of specimens illustrating the condition of horticulture in other countries as well as our own.

The unsettled account with the former treasurer, H. Dale Adams, was placed in the hands of W. K. Gibson, who was authorized to take steps to secure a prompt settlement.

The annual union fair of the State Agricultural and Pomological Societies for 1879 was held at Detroit on the 15th to 19th of September.

The entries in the horticultural department exceeded fifteen hundred.

At this exhibition the experiment was tried of securing an expert from

another State to conduct the examinations as chairman of awarding committees, so far as time sufficed to do so. H. T. Brooks, of New York, consented to attend the exhibition for this purpose, and the result proved eminently satisfactory. His report says, "The Detroit exhibition was every way creditable to the society under whose auspices it was made, and to the fruit growers of the Peninsular State. The chairman of this committee, residing in the State of New York, and familiar with its fruit exhibitions, has seldom or never seen it excelled."

Under the former practice of both the Agricultural and the Pomological Societies, the expense of drayage and breakage of plates was always a considerable item, to obviate which, in 1877, the latter society purchased five thousand paper plates. These, however, proved far from satisfactory, and were disposed of. After careful inquiry and examination, four thousand japanned tin plates were purchased which have now been in use two years, giving eminent satisfaction.

At a session of the executive board held at Detroit during the State fair the secretary was instructed to send greeting to the American Pomological Society then in session at Rochester, New York.

Also, on motion of E. F. Guild, the required notice was given of the purpose to propose at the next regular meeting that the name of the society be changed from Pomological to Horticultural.

The representative of the James Vick seed establishment offered bouquets of grasses for sale in the hall of the State Horticultural Society contrary to its rules, and upon the attempt to enforce such rules, obtained written permission to do so from the general superintendent of the State Agricultural Society. By direction of the executive board the secretary entered a vigorous protest against such act.

President Lyon was not in attendance at the State fair, he having been delegated to represent the society at the meeting of the American Pomological Society, which occurred during the same week at Rochester, New York, where this State was represented by T. T. Lyon, accompanied by Professor W. J. Beal, Israel Pennington, J. P. Thompson, E. Bradfield and J. B. Dumont.

Owing to the non-attendance of President Wilder, the meeting was called to order by Dr. John A. Warder, of Ohio, who introduced Patrick Barry, of New York, who, as first vice-president, assumed the chair.

At the election of officers W. J. Beal, of Michigan, was chosen member of the executive committee. He also read a paper on "The Peculiarities of Flowers in Apples," with references to their use as aids in the identification of varieties.

The committees reported on exhibition 859 plates of apples, 517 of pears, 16 of peaches, 409 of grapes, and 37 of miscellaneous fruits.

Among the awards was a Wilder medal to the Michigan State Pomological Society; but, in consideration of the fact that nearly the entire exhibit was contributed by the Grand River Valley Horticultural Society, including the beautiful grape exhibit of E. Bradfield, of Ada, the Michigan delegates requested that the medal be given to that society.

An invitation was extended to the society to hold its session for 1881 in Michigan; but in compliance with the desire of President Wilder it was determined to hold it at Boston.

The annual meeting of the State Pomological Society was held at Allegan,

December 2d to 4th, 1879, in acceptance of the invitation of the Allegan County Pomological Society.

After the welcoming address of President H. Dewey, of the local society, and a few words in response by President Lyon,

R. T. McNaughton, of Jackson, read an essay on "Habits of Observation a Practical Assistance to the Fruit Grower," which was followed and discussed by L. A. Lilly, of Allegan.

R. Haigh, jr., of South Haven, also followed with an essay on the same subject, the discussion of which was continued by James Satterlee, of Greenville, and Mr. Potter, of Kalamazoo.

The president's annual address was then read, inviting criticism upon the society's catalogue of fruits as now published, as a means of suggesting any needful changes, and bringing it to a more permanent condition.

The necessity of more complete coöperation on the part of local societies, and of a more extended membership, was urged, and the propriety of declaring a position as member of the executive board vacant in case of continued absence from its meetings was suggested.

W. A. Brown, of Stevensville, opened the discussion on the "Influence of Local Horticultural Societies upon Communities."

The subject was well discussed, with great unanimity of opinion as to the beneficial influence of both local and general societies.

On Wednesday morning the resignation of Geo. Parmelee as member of the executive board was received and accepted.

Professor Beal read his paper, given before the American Pomological Society, at Rochester, N. Y., in September last, on "Describing Apples by their Flowers."

A lengthy discussion followed, and the essayist was freely plied with questions. He doubted if trustworthy determination of varieties in nursery rows could be made, in most cases, from peculiarities of twig, bark, stem and leaf, but thought that valuable aid to nomenclature might be found in the blossoms.

"The Grape Vine Thrips" came next under discussion. A communication from S. B. Peck says, among other things: "Instead of flying into the fire, as they ought, they fly from it. The scent of burning tar and tobacco under them seems not even to disgust them. Drenching with tobacco tea, lime and sulphur solution, dilute carbolic acid, and even kerosene seems harmless to them. They are at their old haunts as soon as the scent passes off. I have hung strong smelling herbs on the grape vines, tansy, cedar boughs and even stramonium in vain; have tried concussion as has been recommended, by firing a gun under them, which simply astonished them."

Among numerous other suggestions, Thomas Petty, of Spring Lake, had prepared common strong wall paper stretched upon a light rectangular frame and smeared with coal tar. This was carried along the windward side of a row, while he scared the insects from the row against it. When they strike the tar *they are there*, and you have the satisfaction of seeing your enemy caught. The paper was soon so covered with them that it needed another coat of tar.

"Distances Apart for Planting Fruit Trees and Plants" was next discussed by E. Buell, of Kalamazoo, followed by several others. Wide divergence of practice was developed, but no definite conclusions were reached.

"Scales of Points for the Judging of Fruits and Orchards" were next considered, but very little was developed save the unreliability of results based upon them.

On Wednesday afternoon Judge Ramsdell described his fruit house, constructed for retarding the ripening of fruits by means of ice.

The afternoon session was largely devoted to reports of officers and committees at the State fair in September.

The report of T. T. Lyon, as chairman of the standing committee on new fruits, was received, together with his report as delegate to the meeting of the American Pomological Society.

The secretary's annual statement was then read, giving a general view of the operations of the past year, with the preparation and publication of the catalogue, the effort to secure a suitable room in the new capitol, quarterly meetings, local societies, the annual fair, the premium list, the orchard committee and numerous other matters.

This was followed by the report of the treasurer, after which the following persons were elected officers for the year 1880:

President—T. T. Lyon, of South Haven.

Secretary—Charles W. Garfield, Grand Rapids.

Treasurer—S. M. Pearsall, Grand Rapids.

Members of Executive Board (full term)—N. Chilson, Battle Creek; James Satterlee, Greenville; (vacancy)—C. R. Coryell, Jonesville.

Also the usual number of vice-presidents.

On motion, the office of librarian was created, and Eli Bidleman, of Lansing, was appointed to that position.

At the evening session, "The Practical Workings of the Yellow Law" were discussed in a paper by Rev. J. F. Taylor, of Saugatuck. He regarded the law as well calculated to defeat its own execution, and chiefly valuable as an educator of public opinion.

In the course of the discussion J. C. Gould, of Paw Paw, a commissioner, thought there was too much red tape about the law, but they had managed to enforce it pretty well.

"How to Use Flowers in the Church, the Home and the School Room" was the next subject discussed, its consideration being opened by Rev. Charles Fluhrer, of Grand Rapids, in a paper replete with appropriate suggestions.

Another essay followed on the same subject, from Rev. J. Sailor, of Allegan.

Secretary Garfield, after a few remarks of his own, read a paper prepared by Miss Emma Field, of Grand Rapids, on "Flowers in the School Room." It gave a characteristic picture of the average country school-house, followed by a finely drawn picture of an ideal and possible one.

Professor Beal gave an interesting address upon "Horticulture at the Agricultural College."

On Thursday morning the session opened with a discussion of the proposition to change the name of the society from "Pomological" to "Horticultural." The subject, on the motion of H. C. Sherwood, was laid on the table.

The question of hedges, as farm fences, which had been deferred to this meeting from a previous one, was now discussed.

J. C. Ratcliff, of Indiana, said hedges had proved abortive in his vicinity, and people were turning to wire fences. He also, by request, made a general statement of the work and condition of the Indiana Horticultural Society.

F. A. Gulley, on Thursday afternoon, addressed the society on the subject of "Horticultural Literature," referring to the very common prejudice against

what is designated as book farming, and making reference to several books and serials of value to those engaged in horticultural pursuits.

George W. Bridgman, who was to follow in the discussion, failing to attend, in a note to the Secretary, says, "Do not fail to insist that, to the horticulturist of Michigan, the best of all works are the Michigan Agricultural and Pomological Reports."

"Cultivating and Pruning Pear Trees" came next under discussion, which was opened by Joseph Lannin, of South Haven. He would vary his style of pruning to correspond with the habit of the variety. He would only plant two varieties for market—Bartlett and Anjou.

A. G. Gulley, of South Haven, had a little experience with the Angouleme. "I had some trees of this variety which blossomed but bore no fruit. One spring, before the swelling of the buds, I took off fully three-fourths of the fruit buds from one of the trees. It was very full of bloom notwithstanding, and it produced a good stand of fruit, while on the others, as usual, I had nothing. In planting a pear orchard I would buy yearlings and cut them down nearly to the ground, causing them to branch low."

C. N. Merriman followed with an essay on "Pruning the Pear," which was treated exhaustively.

"Mutual Relations of Nurserymen and Fruit Growers" was the next subject of discussion, which was commenced by a paper from G. H. La Fleur, of Allegan, and followed by one from E. M. Potter, of Kalamazoo.

The discussion of the question closed with remarks from several persons, and a final remark concurred in by several speakers, that the society's fruit catalogue was exerting a powerful influence toward increasing the planting of the best sorts.

At the evening session the report of the fruit committee showed one hundred plates of apples on exhibition and one plate each of pears and grapes, adding, we regret exceedingly to find so many specimens containing worms, or a record of their transactions.

"The Culture of the Quince" was next discussed by Messrs. Sherwood, Merriman, Lyon and Cook.

"Are we not Lowering the Pomological Standard of Merit by too often Applying the Market Test?" was the subject of a paper read by T. T. Lyon, of South Haven.

The idea of the essay was strongly corroborated by General Pritchard, as he had observed in the Allegan market, in which, more recently, the dessert fruits are rarely to be found.

Senator Palmer, of Detroit, was called upon and said a few words of encouragement.

Mrs. J. D. W. Fisk, of Coldwater, contributed a good paper upon "Our Native Ferns," which was read by the secretary.

An inquiry respecting grape rot elicited several remarks, but little specific information was elicited.

Lyman Lilly, of Allegan, suggested that one dollar be made to cover a membership in both the State and local society, but the proposal was not acted upon.

After the adoption of appropriate resolutions of thanks for accommodations, the society adjourned to meet at Hillsdale in February upon the call of the proper officers.

At a session of the executive board held at Allegan during the annual

meeting of December 2d to 4th, 1879, T. T. Lyon, C. R. Coryell and E. F. Guild were designated a committee to review the constitution and by-laws and report at the February meeting such additions and amendments as they shall deem desirable.

A statement having been received from ex-Treasurer Adams, respecting his indebtedness to the society, it was determined to continue the matter in Mr. Gibson's hands, and he was instructed, in case of non-payment, to proceed to collect of Mr. Adams and his bondsmen.

Judge Ramsdell announced that the sum of \$50 was in the hands of his brother, T. J. Ramsdell, of Manistee, subject to the order of the society. The thanks of the society were tendered for the same and the secretary was instructed to draw an order for the same, it being the amount of an appropriation by the county in consideration of volumes sent there by the State Pomological Society.

In response to a question by Professor Beal, Mr. N. Chilson, chairman of the business committee, stated that \$320 of the life membership fund and something over \$180 of the general fund was yet in Mr. Adams' hands. Mr. Adams' bondsmen were good and the indebtedness was considered safe, although the society had so far been unable to secure its payment.

The winter meeting of the State Pomological Society occurred at Hillsdale, in conjunction with that of the Hillsdale County Agricultural Society, on February 11th to 13th, 1880, upon the invitation of the latter society.

On the afternoon of Wednesday, at the first session, a letter was read from Nathan Shotwell, Concord, Jackson county, on the planting and care of the orchard, the warfare with insects, the protection of birds and other kindred matters.

"How to Enhance the Value of a Farm to Sell or to Keep" was the subject of a paper read by Alexander Hewett, of Hillsdale. The paper and the subsequent discussion involved many considerations of importance alike to agriculture and horticulture.

A committee of the Pomological Society, which had been appointed at the annual meeting to revise its constitution and by-laws, and in connection with the acceptance of the report, the proposal to change the name of the society was discussed informally.

The secretary was instructed to give notice of the submission of the revised constitution and by-laws at the next meeting.

On Tuesday evening the chair was occupied by President Smith of the Agricultural Society.

Invitations were received from South Haven and also from Ann Arbor for the Pomological Society to hold its next meeting at those places.

Mayor Whelan welcomed the society to Hillsdale in a short but appropriate address, which was responded to by President Lyon, of the Pomological Society.

"The Best Means to Perpetuate the Growth of the Society" was the subject of an address by W. K. Gibson, of Jackson, in which he developed the plan of organizing auxiliary societies in the several fruit counties of the State, as a means of practically localizing the State society in each county.

T. T. Lyon followed the above with an address on "Evergreens for the Farm," to be employed as windbreaks, for which he suggested white, Austrian and Scotch pines, our native hemlock and Norway spruce. Also for screens and similar purposes arbor vitæ, red cedar and hemlock.

The subsequent discussion brought out opposition to the use of shelter belts along the shore of Lake Michigan; also a preference in some quarters for the shearing of evergreens.

A communication was received from Jacob Ganzhorn, secretary of the Ann Arbor Pomological Society giving the history of the White Ann Arbor grape, of which some account will be given in connection with Washtenaw county.

In connection with the foregoing, a letter was read from Charles A. Green, of Rochester, N. Y., stating certain theories respecting the process of originating new varieties from the seed. He states that, "The Wager peach reproduces itself from its seed, if on its own roots, but when budded on other roots it will not." This statement may be referred to high authority, but, in despite of this, there are not only reasons, but abundant experience to warrant doubts of its correctness.

Professor W. J. Beal followed with an extended botanical explanation of the process of reproduction from seed both naturally, by crossing and by hybridization as well as from sports, following which he was made the target for a volley of questions.

"How to Grow Apples for Profit" was the subject of an address by J. Webster Childs, of Ypsilanti, in which he detailed his views of the best practice from the inception of the orchard to the gathering, packing and marketing of the fruit.

Professor A. J. Cook followed with some of the most approved methods of insect warfare, illustrating his remarks with blackboard drawings. The use of bands as traps for the codling moth, spraying the trees with Paris green and various other methods were discussed.

F. M. Holloway opened the subject of "Fertilizers for the Orchard and Farm," which he treated fully, preferring seeding down and mulching for the apple and pear, and cultivation for the peach.

On Thursday afternoon J. S. Woodward, of Lockport, N. Y., read a paper in response to the question, "How Can a Supply of Grapes for a Farmer's Home be Cheaply and Successfully Grown," treating upon varieties, soil, aspect, culture, training, diseases and insects.

A letter followed from E. Bradfield, of Ada, who, after describing "the better way," closed by saying, "It is about as easy for a farmer to grow a supply of grapes as a supply of corn, and far easier than a supply of plums. Let any farmer plant twenty-five or fifty, two or three years old, hardy grape vines, give them the same attention the first two years that he does a row of corn after planting it, and he will have grapes in spite of any neglect afterward. He may train on a trellis, let them run over a rail fence, or plant four feet apart each way and tie two or three canes up to stakes four or five feet high. In either case he will have grapes. But if he has to mow down the weeds the first and second fall after planting to find the vines he 'speaks the truth and lies not,' when he says he can't grow grapes."

H. B. Tucker, of Hillsdale, gave an essay stating his methods and recommending to plant Concord and Delaware.

E. M. Potter, of Kalamazoo, followed with a short paper, recommending Concord first, and adding Brighton, Delaware, Iona, Agawam and Salem.

In reply to a question Mr. Woodward said, "You may as reasonably expect a calf to live, thrive and mature, if you cut out his stomach, as to expect grapes to grow and ripen after removing the leaves."

"Storing Winter Apples" was the subject of an essay by S. W. Dorr, of

Manchester. After detailing the processes of gathering and handling, he closed by proposing the constructing of a retarding house for the purpose of keeping fruits for a later and better market.

For this purpose H. P. Hanford, of Bristol, Indiana, preferred the Cope house, which requires no ice.

After a short discussion upon fertilizers a recess was taken till the evening.

The session on Thursday evening may appropriately be designated as Secretary Garfield's first lovefeast, which consisted of a series of topics or sentiments to be responded to by selected speakers, the whole to be interspersed with music.

The attendance was large and the entire exercises very enjoyable.

On Friday morning the committee reported the exhibit of fruit of fine quality, although not large.

The plants and flowers exhibited were fine and nicely arranged.

A rambling discussion followed and several questions were asked and answered, and after the adoption of appropriate resolutions the society adjourned to meet at Battle Creek in June.

On June 9th, 1880, the executive board met at Lansing.

Much embarrassment having from time to time been experienced from the unfavorable character of the halls assigned for the society's annual exhibitions, Mr. N. Chilson had been deputed to learn the probable cost of a suitable tent for such purpose. His report stated the probable cost to be about \$500. Objections were also made from liability to mildew or other injury while not in use. The whole matter was tabled.

A first premium of \$50 and a second of \$25 were offered for the most persistent and best directed endeavors to combat the codling moth—minute reports to be made of methods and their success.

Ten copies of the annual report of 1879 were ordered sent to each member of the executive committee of the State Agricultural Society in exchange for the same number of their report.

The committee to review the constitution and by-laws reported, and their report was accepted and adopted as the sense of the executive board, to be by them submitted to the society at the next regular meeting.

The executive board visited the Agricultural College as the guests of the State board of Agriculture jointly with the executive committee of the State Agricultural Society and the officers of the State Grange. Under the guidance of Professor W. J. Beal and his assistants an interesting and profitable tour was made through the horticultural department, at that time under his charge.

The State Pomological Society held its summer meeting at Battle Creek, on June 16th to 18th, 1880.

On Wednesday evening, 16th, the meeting was called to order by the president.

The secretary read the following recipe, from S. H. Comings, of St. Joseph, for a prevention of curculio: Two pounds of whale oil soap, boiled in water enough to fully dissolve it, add, while hot, one pound of tar, stirring it in, mix with fifteen gallons of water, and with syringe shower it over the trees thoroughly. Repeat after every rain storm.

At a previous meeting a committee had been appointed to report respecting an apple grown in Lenawee county under the erroneous name of Steele's Red, and to determine its proper name. Mr. B. W. Steere, on behalf of such com-

mittee, reported in favor of the name, Morris' Red. Its description and history will appear in connection with Lenawee county history.

"The Use of the Microscope by Fruit Growers" was the subject of a paper by Dr. Hawkshurst, of Battle Creek.

On Thursday morning reports from various localities showed the prospect to be for an unusually fine fruit crop.

"Gumption in Horticultural Operations" being the first topic of the morning, H. Dale Adams opened the discussion by inquiring the meaning of gumption.

Several definitions were given, one by Professor Tracy being illustrated by the exhibition of a home made hand drill for sowing seeds.

The discussion finally ran mainly into a consideration of various horticultural appliances.

Jeremiah Brown read a paper on "Small Fruits for Farmers' Homes," considering them in the order of maturing, and inviting a higher appreciation of their importance on the part of farmers generally.

The afternoon session opened with a paper by E. M. Potter, of Kalamazoo, on "Boys, Birds and Berries," replete with humorous and pithy hits at popular practice, and with suggestions respecting possible improvements. It seemed to so far demoralize the conceptions of the audience that the subsequent discussions ran off on various tangents, finally converging upon a discussion of varieties of small fruits, and settling upon the effort to discover something as good or better than the Wilson strawberry.

F. S. Kedzie next invited the attention of the audience to "Science in Fruit Canning and Jelly Making," explaining the chemical principles involved, and the mechanical difficulties to be overcome in these processes.

This was immediately followed by an essay from Mrs. Perry Mayo, of Marshall, upon the practical branch of the subject.

E. M. Potter followed, telling how to successfully can grapes.

W. A. Brown, of Stevensville, offered a resolution condemning the putting up of fruits in water, for exhibition at fairs. To avoid prolonged discussion this was subsequently withdrawn.

A paper was next read by R. Haigh, jr., of South Haven, on "Ornamenting Country School Grounds." The essay elicited much discussion; the needful amount of ground, the mode of reaching those interested, the need of coöperation by the department of education and the State Normal School, all coming under consideration.

On motion of H. Dale Adams, a committee was appointed to report a plan of definite action on Friday. H. Dale Adams, C. D. Lawton and W. W. Tracy, were named as such committee.

"Fairs for Amusement and Instruction" was to have been discussed by J. P. Thompson. In his absence, owing to severe illness, a short discussion was had, and J. C. Holmes, W. W. Tracy and R. F. Johnstone were appointed to draft a resolution expressive of the sympathy of the society and its appreciation of his efforts in its behalf.

On Thursday evening, after a delightful musical treat, the committee appointed to indicate a course of action on the subject of "School Grounds and their Ornamentation," reported the following:—

"In view of the neglect of school grounds throughout the State, and of the educational value of flowers, foliage, and general horticultural ornamentation, and also with a view to secure the increased comfort of our children,

the State Pomological Society earnestly suggests to its members and to all good citizens of the State, that they endeavor to awaken public attention to this matter, and improve every reasonable opportunity to reform public sentiment to the extent that, in due time, our desolate, neglected school yards shall become places of beauty, shaded and ornamented with trees and flowers. And with the view of securing the active effort of teachers to this subject we invite the attention of the officers of the University, Agricultural College, Normal School, Superintendent of Public Instruction, State Board of Education and all other educational institutions, especially those engaged, wholly or in part, in training teachers for our elementary public schools, to the important subject of ornamenting school grounds, and respectfully ask that they coöperate and unite their efforts with the efforts of this society to secure public attention to the matter, and the proper public sentiment in its favor.

“A few Apples that are Good to Eat, and Why,” was the subject of a paper by T. T. Lyon. Thirty-seven varieties of apples were specified as *good to eat*.

J. C. Holmes noticed that his special favorite, Fameuse, had not been included. He was told that Shiawassee, which was named, is but a reproduction of Fameuse, without its tendency to scab.

J. D. Adams said if a list of ten varieties was made we could afford to lose the rest.

Others replied “we can afford to have our list of family apples indefinitely extended,” although market sorts were to be placed upon a different footing.

W. W. Tracy followed with a conversational address on “The Practicability of Aesthetic Culture.”

The doctrines of the address were warmly endorsed by R. Haigh, jr., T. T. Lyon, Mrs. Mayo, Senator T. W. Palmer and others.

The committee to report resolutions of sympathy with J. P. Thompson reported on Friday morning as follows:

WHEREAS, This society has heard with deep regret that Mr. J. P. Thompson, of Detroit, is suffering from severe illness, preventing his attendance upon this meeting of the society, in which he has taken so warm an interest, and of which he has been so valuable a member; therefore,

Resolved, That we tender and express our sincere sympathy with Mr. Thompson in his severe illness, and trust that he may recover at an early day, and resume his accustomed place in the society; and furthermore,

Resolved, That a copy of these resolutions be forwarded to Mr. Thompson.

The committee on articles exhibited made a full and excellent report, which was accepted and adopted.

S. B. Mann, of Adrian, submitted his report as delegate to the annual meeting of the Ohio Horticultural Society, which was accepted.

C. R. Coryell, of Jonesville, also reported as delegate to the Indiana Society, which report was accepted.

The revised draft of the constitution and by-laws of the society laid on the table at the February meeting was, on motion, taken up and acted on article by article.

The chief division was upon the first article, which should contain the name of the society. After several motions to lay on the table, indefinitely postpone, etc., the question was brought to a vote, and the article adopted, as follows:

ARTICLE I.—*Name, Territory, and Objects.*

The name of the society shall be, the Michigan State Horticultural Society, and territory shall be the State of Michigan. Its objects shall be the development of an adequate appreciation of the peculiar adaptation of the soils and climate of the State to the pursuit of horticulture in all its branches, and the collection and dissemination of information bearing upon the theory and practice of the same, as well as upon the arts and sciences directly or indirectly associated therewith, or calculated to elevate and improve the practice thereof.

The remainder of the constitution and the by-laws were adopted as reported by the committee, without opposition.

After the adoption of the report by the committee on resolutions, the society adjourned.

The union fair of the State Agricultural and Horticultural Societies occurred at Detroit, September 13th to 20th, 1880.

The arrangement constituting the division superintendents chairmen of the viewing committees proved highly satisfactory.

With an unusual abundance of fruit in the State the number of entries was just one thousand, one-third less than last year, with an unusually short crop.

An unusual and interesting entry was made in Division W. Bouquets and floral designs of a number of sheets of mounted leaves, by three students of the Agricultural College, illustrating leaf classification.

A special committee was selected to examine the entry, who reported: We have taken especial pleasure in viewing the work of Messrs. W. H. Bristol, J. E. Eddie, and C. M. Weed, of Lansing, and recommend a premium of five dollars to each of them, in consideration of the labor and pains taken in perfecting the display. We think it should be the policy of the society to encourage such exhibitions for decorative and educational purposes.

At a meeting of the executive board held at Detroit during the State Fair on September 13th to 17th, 1880, the arrangements were completed for the issue of the new life membership certificates and diplomas, blanks for which were to be prepared by the Calvert Lithographing Company.

On November 4th, 1880, a meeting of the executive board was held at Lansing.

The request of Mr. Lewis, of Ganges, that members of local auxiliary societies be made voting members of the State Society, was laid on the table for consideration at the annual meeting.

At the session of the executive board held during the annual meeting, at Ann Arbor, on December 7th, 1880, the by-laws were so amended as to provide that any person paying one dollar as member of an auxiliary society shall be constituted also a full member of the State Horticultural Society, upon the remittance of one-half that sum, together with his name, by the secretary of such auxiliary society to the secretary of the State Society.

The annual meeting of the State Horticultural Society was held at Ann Arbor, on December 6th to 8th, 1880, upon the invitation of the Washtenaw County Pomological Society. There were nearly one hundred delegates in attendance from other counties of this State; also Charles Arnold and William Saunders as delegates from the Ontario Fruit Growers' Association, Dr. John A. Warder, President of the Ohio Horticultural Society, and J. S.

Woodward, H. E. Hooker, and Mr. Chase, of the Western New York Horticultural Society.

The exhibit of apples was large and the quality superior, much of it having probably been drawn out by the offer, by the society, of a premium for the best five varieties of winter market apples, the same for five varieties of winter dessert apples, and the same for five varieties of winter cooking apples.

The display of flowers and plants was exceedingly fine and beautifully arranged by the contributor, James Toms, occupying a tastefully decorated side room, besides the display upon and about the desk.

The President called the meeting to order in the Circuit Court room on Monday evening, December 6th.

The welcoming address by Judge Page, and the response by the President were preceded and followed by music in charge of Professor Alvan Wilsey.

Professor Beal, of the Agricultural College, opened the business of the session with an address on the "Oaks of Michigan and the World." He stated that in the whole world, as far as discovered, there are about four hundred species in the entire family, of which three hundred are oaks. The address throughout was a mass of valuable information, clothed in terse, compact phraseology, and will well repay careful study.

Professor J. B. Steere then read a very interesting paper, illustrated by a collection of specimens, on "The Migration of Michigan Birds." The address was highly instructive, upon a subject which rarely engages the attention of the mass of people.

The address closed with a list of 33 birds, residents of Michigan; 110 birds nesting in Michigan and wintering to the south; 68 birds wintering to the south of Michigan and nesting to the north, being only known in the State as migrants; 18 winter visitors but not summer residents in Michigan; 36 ducks, cormorants, gulls and terns will probably be found occupying the open waters of the great lakes in winter.

On Tuesday morning, after some preliminary business, Dr. John A. Warder read a paper entitled "Landscape Gardening for the Cemetery." No epitome or series of extracts can do justice to the address. It must be read as a whole to be properly comprehended.

A communication from Dr. Frieze, of the University, was received, inviting the society to visit the institution. The invitation was accepted for the following afternoon.

"The Value and Culture of the Less Common Vegetables" was the subject of a paper read by R. T. McNaughton, of Jackson.

Among these less common vegetables he included asparagus, cauliflower, celery, egg-plant, radish, salsify, spinach, and sweet potato.

After a short discussion of the last paper, Professor Cook, of the Agricultural College, read a paper on "New Insect Enemies and New Methods of Insect Warfare."

The insects to which attention was invited were the Grape Vine Flea Beetle (*Haltica chalybea*), and the Snowy Cricket (*Oecanthus nivius*).

Paris Green, London Purple, Bisulphide of Carbon and Pyrethrum, as insecticides, were discussed at some length.

On Tuesday afternoon a very considerable number of visitors made the tour of the University buildings under the guidance of Dr. Frieze.

On returning the meeting was again called to order and the secretary read a paper from E. M. Potter, of Kalamazoo, on the question, "Shall Tree Agents be Encouraged?"

The writer of the paper looked at matters from the tree agents' standpoint, for whom some good points were made. The audience had known so much of the reverse of the picture, however, that although *tree agents* were admitted not to be an unmitigated evil, the prevailing advice was to deal with the nursery direct, and, to close the discussion, the following was adopted:

Resolved, That we recommend to purchasers the plan of buying nursery stock of nurserymen, direct when they can, otherwise, of agents who can establish their responsibility beyond a doubt; and to have no business transaction with tree agents or peddlers who have no authority from a known responsible firm.

The Tuesday evening session was opened by some excellent music.

W. W. Tracy, of Detroit, addressed the society on "The Difficulty of Maintaining Pure and Good Seeds," urging the importance of applying the same principles in the growing and selection of seeds as are considered necessary in the breeding and selection of animals.

H. E. Hooker, of Rochester, N. Y., fully endorsed the ideas advanced in the address.

Professor Daniel Putnam, of the State Normal School, addressed the audience on "The School Garden," treating the subject exhaustively, and remarking in conclusion that, "This society can do no greater or grander work than the turning of the barren wastes of our school yards into shady groves and blooming gardens."

Professor A. Winchell, of the Michigan University, then read a paper on "The Climate of Michigan," explaining that our modified climate is the natural and necessary outcome of our lacustrine surroundings and of the direction of our prevailing winds.

On Wednesday morning a committee of five was appointed to nominate officers for the ensuing year.

The executive board was instructed to appoint three delegates to the convention of Michigan agricultural societies.

S. W. Dorr, of Manchester, addressed the society on "The Danger of Overdoing Fruit Culture in Michigan." Both the address and the subsequent discussion indicate a confidence that markets will not be lacking for our fruit products, especially for high grade fruits.

The society next listened to the annual statement of the secretary, who, among other things, remarks the neglect of our exhibitions by the florists and amateurs of Detroit.

He also compliments exhibitors of fruits on their improved ability to select perfect specimens, and to correctly name varieties.

During the year the society had devised the plan of organizing branch or auxiliary societies wherever the local interest shall so warrant, and making these local organizations the medium of distribution of the annual volumes, as well as of the collection and distribution of information generally.

Following the secretary's report the annual address of the president was read.

The report of T. T. Lyon, chairman of committee on new fruits, was then read.

The following persons were then elected officers of the society for the ensuing year:—

President—T. T. Lyon, South Haven.

Secretary—Charles W. Garfield, Grand Rapids.

Treasurer—S. M. Pearsall, Grand Rapids.

Members of Executive Board—W. K. Gibson, Jackson; E. F. Guild, East Saginaw; together with the usual number of vice-presidents.

The Wednesday afternoon session was opened with a paper on "Reciprocity" by Mrs. Pierce.

Professor Harrington followed with an address on "The Winds of Michigan," illustrated by crayon drawings explaining parallel, centrifugal and centripital winds, zephyrs, ascending vertical currents, squalls, tornadoes, cyclones, anti-cyclones, etc., with references also to trade and anti-trade winds.

A paper on "The Origin and Advantages of Association," was then read by Mrs. McReynolds.

James Satterlee, of Greenville, then read a paper on "Our Trip to the Agricultural College," giving an account of the visit to the Agricultural College on June 10th, 1880, already referred to.

A. C. Glidden, of Paw Paw, next talked about "Memorial Trees."

Charles Arnold, late of Paris, Ontario, so well remembered for his skill and success as a hybridizer, then followed with a poem on "The Old Kentish Cherry," adding pathos to the sentiment of the previous paper.

On motion of S. L. Fuller, of Grand Rapids,

Resolved, That the officers of this society be instructed by this meeting to communicate with the incoming Governor upon the subject of tree planting, and respectfully ask him to issue a proclamation for the observance of Arbor Day, setting the date so as to be in proper season for the transplantation of ornamental trees.

On motion of E. F. Guild, of East Saginaw,

Resolved, That, in appreciation of the delightful display of plants, flowers and decorations, by Mr. James Toms, of Ann Arbor, the secretary be instructed to issue him a certificate of membership in this society for 1881.

On motion of the secretary,

Resolved, That the gratitude of our society be extended to the delegations from New York, Ohio and Canada, for the honor of their presence and assistance at this meeting, and especially that the thanks of the society be extended to Mr. Charles Arnold, of Ontario, for the fine exhibit of fruit which he has placed upon our tables.

The Wednesday evening session opened with music, followed by a discussion on "How to Utilize the Fruit Crop." Drying, canning, jelly making, etc., were suggested. Miss Sara Fletcher was called on, and explained her system of jelly making, remarking "What we need is a better grade of these things than we usually find upon our grocers' shelves."

Dr. Conklin, of Manchester, read a paper which closed the discussion of this subject. He suggested refrigeration as a means of arresting decay pending a resort to the measures already suggested.

Three premiums of \$5.00 each, offered for fruits exhibited at this meeting were awarded as follows:—

For best five plates of winter market apples, to J. N. Stearns, Kalamazoo, for Baldwin, Northern Spy, Red Canada, Jonathan and Ben Davis.

For best five plates of winter cooking apples, to H. F. Thomas, Jackson, for Rhode Island Greening, Baldwin, Yellow Belflower, Esopus Spitzenburgh and Northern Spy.

For best five plates of winter apples for dessert, to S. W. Dorr, Manchester, for Newtown Pippin, Hubbardston, Jonathan, Belmont and Wagener.

A large number of plates not entered for premium, were also exhibited, among which were fine collections by Charles Arnold and William Saunders, of Ontario, Prentiss grape, by T. S. Hubbard, of Fredonia, N. Y., Niagara grape, by the Niagara Grape Company, of Lockport, N. Y.

The committee on plants and flowers also made their report, the gist of which is given in the resolution previously adopted by the society.

The remainder of the session was devoted to memorial exercises in honor of Jonathan Palmer Thompson, a president, and subsequently a secretary of the society, who died at Detroit, July 8th, 1880.

S. L. Fuller, of Grand Rapids, gave a history of Mr. Thompson, and spoke feelingly and appropriately of his valuable services and estimable qualities.

The secretary read a letter from A. T. Linderman, the first secretary of the society, expressing his high appreciation of Mr. Thompson, and regretting his inability to be present. On motion of H. Dale Adams, of Galesburgh, the following preamble and resolutions were adopted by a rising vote:

WHEREAS, By the death of Jonathan Palmer Thompson, this society has lost one of its earliest and best friends, whose efforts were untiring for its success and whose wise counsels have largely contributed to its present prosperity; therefore

Resolved, That, in the death of Mr. Thompson, this society has lost a wise counsellor, a sincere friend and a most earnest worker, and the State a most valuable citizen.

Resolved, That these resolutions be spread upon the records of the society, and a copy transmitted by the secretary to the family of Mr. Thompson.

On motion of Mr. A. C. Glidden, of Paw Paw:

Resolved, That the secretary be instructed to secure an engraving of Mr. Thompson, to be placed in the transactions of the society as soon as practicable.

Resolutions thanking those who had contributed to the success of the meeting and its accessories, and to the pleasure of those in attendance were adopted, whereupon the society adjourned.

During the year 1880 Secretary Garfield, acting under instructions from the executive board, made an effort to gather material for a history of Michigan horticulture by means of circulars of inquiry and also through private correspondence. The results were more meagre than had been anticipated and were embodied in the transactions of that year.

The late S. B. Peck, of Muskegon, contributed a paper to the New York Sun, copied in the secretary's portfolio of 1880, advancing the opinion that the codling moth larva is migratory, not confining itself to a single apple, but passing from one to another, often attacking and ruining several apples before pupating. The observations and experiments upon which this conclusion is based were commenced as early as 1875 and were strongly confirmed by the observations of others. The correctness of this conclusion has been questioned upon high authority but is sustained and confirmed by the evidence of many persons of wide experience and careful observation.

The experiments of T. J. Burrill, professor of botany and horticulture at the Illinois Industrial University, developing the idea that bacteria are in fact the cause of pear blight and of yellows in the peach were published during this year and have more recently been confirmed and amplified by the experiments of Professor Arthur, of the New York experiment station.

A general index of the first nine volumes of the society's transactions was prepared by the secretary and is published in connection with the volume for 1880.

The winter meeting of the State Horticultural Society was held at the capitol at Lansing on January 31st and February 1st, 1881.

This was intended strictly as a business meeting of the executive board, to which, however, others were invited.

The newly devised process of distributing the annual reports being under consideration, the process of organizing local auxiliaries and making them the media for the distribution of the volumes and constituting a volume a perquisite of membership whether in the parent or in a local society was carefully considered, together with the obligation imposed upon the society to place the volumes as far as practicable in appreciative hands instead of sending them, as had been too often done, to any one who would pay the charges upon the package, as was also the well understood fact that after the society had been at the expense of providing the matter and editing and distributing the volumes they had become the means of diminishing rather than increasing the membership of the society by supplying the desired information without the necessity of becoming members or of even attending its meetings. So far as indicated by the discussions the sentiment of the meeting was unanimous in favor of the process now employed, and on motion the whole matter of the distribution of reports was referred to the executive board.

The size of fruit packages being under consideration letters were read saying that committees of the Western New York Society and of the Ontario Fruit Growers' Society were desirous to confer with a committee of this society with the purpose to agree upon a uniform standard. The president appointed C. W. Garfield, of Grand Rapids, E. F. Guild, of East Saginaw, and S. B. Mann, of Adrian, a committee for such purpose on behalf of this society.

Upon the request of the Mississippi Valley Horticultural Society that a suitable person be nominated as vice-president of that society for Michigan.

On motion of S. M. Pearsall, William Rowe, of Grand Rapids, was named for that position.

On motion of N. Chilson, of Battle Creek, the librarian was instructed to purchase a copy of the History of the Massachusetts Horticultural Society for the library and to render his bill for the same.

The secretary read a letter from President Wilder, of the American Pomological Society, as follows:

MY DEAR SIR:—In a word the American Pomological Society will hold its eighteenth session in Boston, commencing September 14th next. Please promulgate this announcement and send a large delegation from your great State and from your great resources.

Yours truly,

MARSHALL P. WILDER.

On motion of Professor Beal, Messrs. Lyon, Beal, and Tracy were constituted a committee to prepare a memorial to the Legislature, asking an appropriation to pay the expense of making an exhibit of fruits on that occasion. The committee reported the following:—

To the Senate and House Committees on Horticulture :

The American Pomological Society is one which for the past thirty-six years has been most influential in moulding and shaping the development of fruit culture in our country, and its biennial meetings have been of great value to pomologists, and through them have excited wide-spread interest among all classes. This society holds its next meeting at Boston, in September next, and efforts are being made to make it an exceptionally large and profitable one. The State Horticultural Society asks an appropriation of \$1,500 to enable it to make there such an exhibit of the fruits of Michigan as shall be creditable to our State, and call the attention of future immigrants to its advantages for producing fine fruit.

T. T. Lyon, on behalf of a previous committee on legislation, made a lengthy report, in which, in speaking of the future of the fruit trade with Europe the necessity of improved waterways, such as shall admit sea going steamers to the upper lakes, was urged; and the fact that this is a matter of common interest to various other branches of trade and commerce was urged as a reason why the fruit interest should not undertake the movement single handed.

The report farther urged the importance of legislation to encourage the improvement of school-houses and grounds, and to require the needful qualification of teachers in this direction.

W. W. Tracy was appointed chairman of the standing committee on the vegetable garden, and R. Haigh, jr., was constituted chairman of the standing committee on landscape gardening, and each was empowered to select his associates.

The secretary made an extended report on the formation of auxiliary societies, of which fourteen were reported already organized, and twelve others in process of formation.

After some farther informal discussion the executive board adjourned.

The executive board met at Lansing on June 2d, 1881, and had a conference with the Governor respecting an exhibit of the horticultural products of the State at the meeting of the American Pomological Society, at Boston, in September, for which the recent legislature had appropriated the sum of \$1,000.

This meeting occurred during the evening previous to the day appointed for the visit of the board to the Agricultural College, upon the invitation of the State Board of Agriculture.

C. R. Coryell was chosen to report the proceedings during such visit.

The summer meeting of the State Horticultural Society was held at Benton Harbor, on June 7th to 9th, 1881, in acceptance of the invitation of the Berrien County Horticultural Society.

On the evening of June 7th, the society was called to order by the president.

After the reading of correspondence, S. G. Antisdale, president of the village, welcomed the society in a very pleasant speech, which was responded to by the president of the society.

In response to a question from the question box, the bird question was warmly discussed for a short time, with the usual difference of opinion.

The second question was—Is there any way of restoring apples once frozen, so that they can be made available?

In reply cases were stated in which apples left to thaw slowly, without having been disturbed, came out sound and good.

Question third—Can we destroy the rose bug, and, if so, how?

Hand picking was the only successful method mentioned.

Question fourth—What varieties of strawberries are planted here, and in what proportions?

The replies were that nearly all those planted for market were Wilsons.

Question fifth—How shall I preserve fruit trees from mice?

Clean culture, mounding with earth, and winding the trunks with tar paper were each suggested by different persons.

On Wednesday morning the first topic was, "The Utility of Highway Tree Planting."

Henry G. Reynolds, of Old Mission, opened the discussion with the remark, "Not the least valuable among the labors of the Legislature during the session just drawing to its close, is a modification of our highway laws, which will, within a few years, go far toward making every country road throughout the State, a delight to the eyes, a pleasure to the weary traveller, a source of pride to every citizen. Truly a large promise, but it seems to me fully warranted."

In this he had reference to the new provisions for excluding cattle and the regulation and encouragement of tree planting.

Objections were made to the shading of the roadway that mud dries more slowly, but the preponderance of opinion appeared to be largely in favor of the trees.

"Lessons from the Winter of 1880-81" was the next subject, which was opened by a paper from S. B. Peck, of Muskegon. The paper abounds with the results of close observation and clear deduction, but no analysis can do it justice. The paper and the subsequent discussion evince the fact that large numbers of grapes, plums and peaches, as well as a few apples, had been either killed or sadly injured.

The discussion of the topic closed with the adoption of the following resolution, moved by S. B. Mann, of Adrian:

Resolved, That as the result of the discussion we believe that the disasters to our fruit trees during the past winter were due to a combination of circumstances peculiar to the season, in connection with the winter, which may not occur again for years.

"How Shall Injured Trees be Reinvigorated?" The discussion of this topic took a wide range with much contrariety of opinion, although the preponderance seemed to be in favor of digging up and planting new trees.

The first topic of the afternoon was: "The Culture and Management of Grapes."

H. J. Edgell, of South Haven, opened the discussion with a paper treating somewhat of modes of management, and also of varieties.

A short discussion followed this paper, after which

S. H. Comings, of St. Joseph, read a paper on "Grape Growing and Wine Making." Growers were cautioned to be on the lookout for the phylloxera and the thrips. Mention was made of the then quite recent plan of stretching wires and training the vines upon cross-pieces nailed across the tops of the trellis plates. He considered the subject of wine from the temperance standpoint as a business to be deprecated rather than encouraged.

Thomas Mason next read a paper on "Varieties of Fruits Adapted to Chicago Market," stating that firmness, color, quality and size in the order named, are the chief requisites, so far as apples are concerned. A bright

red is the most popular color, hence Red Canada, Winesap, Willow Twig, Jonathan, Baldwin, and even Ben Davis is preferred to a better apple of a poor, dull, or rusty color.

Peaches, pears, plums, cherries and the small fruits generally were rather rapidly treated, the strawberry receiving the larger share of attention. Twenty-three varieties of this fruit were named and classified, but all were considered as of little value as compared with Triomphe de Gand and Wilson, the latter being the one preferred.

The next topic was "Fruit Packages and Legislation Concerning Them," and the discussion was opened by a paper from W. A. Brown, of Stevensville. This somewhat lengthy paper was subsequently stated to be the majority report of a committee of the Berrien County Horticultural Society.

This was followed by a minority report of members of the same committee, read by Robert C. Thayer, of Benton Harbor, entitled "Honesty in Horticulture."

The difficulty of solving the problem seems to have been the inability of those concerned in the effort to secure legislation to agree among themselves.

The evening session was devoted to a discussion of "Fruit Packages and their Sizes."

Mr. Comings addressed the meeting at some length and closed by offering a series of preambles and resolutions, favoring a general and united movement looking to the adoption of uniform sizes of packages, each marked with its actual capacity, also the publishing of the names of package manufacturers who will engage to supply packages so marked.

The preambles and resolutions were adopted, whereupon a member moved that the members of the Berrien County Horticultural Society, before shipping any more short packages, solemnly consider the action of this evening.

Mr. Tate further suggested that members of the State society might well be included.

On Thursday morning, after the reading of letters received by the secretary, a resolution was adopted requesting the secretary to correspond with the new Commissioner of Agriculture, asking, on behalf of this society, that Professor Comstock be retained as government entomologist.

Resolved, That this society endorse the main features of the bill presented in our legislature by Representative Garfield, entitled "A bill to provide for marking the capacity on fruit packages," and that the president do now appoint a committee of three, whose duty it shall be to do all in their power toward securing the passage of this bill or its equivalent, by ordinance, in the city of Chicago, and by enactment in the State Legislatures of Illinois and Michigan.

The president appointed as such committee, S. H. Comings, A. R. Nowlen and Joseph Lannin.

Yellows legislation was the next topic discussed.

Secretary Garfield, being a member of the legislature, was called on to state the condition of affairs, and gave a history of the action upon the subject, and also read a copy of the law recently enacted.

A somewhat prolonged discussion ensued but nothing new was elicited.

A history of fruit growing at Benton Harbor was given by Mr. Morton.

T. T. Lyon closed the morning exercises with some account of the newer strawberries.

At the opening of the afternoon session the president called attention to

the meeting of the American Pomological Society to occur at Boston early in September next, and to the fact that commissioners were soon to be appointed by the Governor to prepare an exhibit, for that occasion, of the horticultural products of Michigan. He concluded by urging that all interested lend a helping hand to render such exhibit as full and perfect as possible.

"Steps toward the Ornamentation of School Grounds" was the subject of a brief address by W. W. Tracy, who spoke fully of the offer of seeds for such purpose by D. M. Ferry & Co., of Detroit.

Mrs. R. C. Tate next read a paper on the "External Embellishment of Rural Homes and its Refining Influences," bringing out prominently the importance of interesting the children of the family in such matters.

An interesting discussion of the two kindred subjects followed, indicating a unanimous feeling in sympathy with the encouragement of such improvements.

"Vegetables for Canning Purposes" was the next topic, which was introduced by Mr. Nowlen, with a short account of the growth of the canning business at Benton Harbor, who stated that at that time about two hundred acres of tomatoes were grown for factory use, which, perhaps, yielded five thousand pounds per acre.

Modes of management and pecuniary results were discussed.

Professor Tracy remarked, "The secret in the growth of all plants that we have imported from a more tropical climate is to maintain a continuous growth from the start. This is true of all cucurbitaceous plants, like cucumbers, melons, squashes, etc., and the same is true with the tomato."

At the close of the discussion, S. H. Comings made an appeal for the benefit of the Berrien County Horticultural Society.

At a meeting of the executive board held at Benton Harbor during the summer meeting of the society, on June 9th, 1881, S. L. Fuller and G. W. Stanton, life members of the society, were appointed to act, jointly with the treasurer, in effecting a satisfactory investment of the life membership fund.

At the request of the Governor, T. T. Lyon, W. W. Tracy, N. Chilson, Judge J. G. Ramsdell, Evart H. Scott, W. K. Gibson, H. Dale Adams, E. F. Guild, W. J. Beal and S. L. Fuller were nominated as suitable persons to receive appointments as commissioners to represent the horticultural interests of the State at the approaching meeting at Boston.

The committee on fruits reported six plates of apples in fine condition by W. K. Emmons, of Kent county, also a small but superior display of strawberries.

The committee on plants and flowers very highly complimented the display in that department.

The committee on resolutions speak warmly of the manner in which the convenience and needs of the meetings have been met and provided for.

The report was adopted by a rising vote.

On motion of Professor Tracy:

Resolved, That a committee be appointed, of which the secretary shall be chairman, to draft some suggestions of the best means to secure the ornamentation of school yards, and to prepare a list of shrubs, herbaceous plants and annuals for this purpose, with directions for their management, and, in some way, to get such report before the people.

Whereupon the society adjourned.

Pursuant to the enactment of the State legislature, and the nominations

of the executive board of the State Horticultural Society, Governor Jerome appointed the following persons as commissioners, viz.: T. T. Lyon, of South Haven; J. G. Ramsdell, of Traverse City; Evart H. Scott, of Ann Arbor; W. K. Gibson, of Jackson, and W. J. Beal, of Lansing.

The commissioners met at Kalamazoo on July 6th, 1881, and organized by electing T. T. Lyon, president, W. J. Beal, secretary, and W. K. Gibson, general manager.

H. Dale Adams, chairman of the general fruit committee of the American Pomological Society for Michigan, who was present, was invited to act with the commission.

The State was districted and assigned to the commissioners as follows: Northeastern Michigan, to Professor W. J. Beal; southeastern Michigan, to Evart H. Scott; southwestern Michigan, to T. T. Lyon; northwestern Michigan, to J. G. Ramsdell; central Michigan, to W. K. Gibson, assisted by H. Dale Adams.

Very perishable fruits were to be sent to the exhibition direct, so as to arrive at the proper time; all other articles to be sent to Lansing and there re-assorted and re-packed.

Secretary Garfield prepared a pamphlet on "Michigan Horticulture" for free distribution at Boston in connection with the exhibit, also a large map of the State devised to express some horticultural particulars.

For complete lists of contributions to this exhibit, which are too voluminous for insertion here, reference is made to pages 75 and 76 of the Transactions of the State Horticultural Society for 1881.

The exhibition was held in the upper hall of the Massachusetts Horticultural Society, whose fruit and vegetable exhibit, which occurred at the same time, completely filled the spacious lower hall, together with two of the five tables in the upper one, while their immense display of plants and flowers occupied the spacious audience room of Music Hall, a block away, completely filling the main floor and the broad platform in front of the immense organ, which contributed its grand music to increase the interest of the occasion. A portion of the cut flowers, apparently lacking room below, was arranged in the front of the gallery.

Michigan was assigned a prominent position at the extremity of one of the central tables, at the end of which was displayed the large map already spoken of, and which had been prepared at the request of Secretary Garfield, by Mr. Sherman of the State Land Office, and which proved a prominent attraction in connection with the exhibit.

The fruits from southern and central Michigan were arranged together as a whole, including a collection of wild fruits and nuts, while those from Grand Traverse were arranged separately, for the purpose of more distinctly showing the differences occasioned by climate, and, at the same time, demonstrating the northward trend in our State of the isothermal lines.

At Boston the commission found Secretary George W. Seaver, of the South Haven Pomological Society, and wife; also B. Hathaway and wife, of Cass county, who were accredited as delegates from Michigan.

The Michigan exhibit, although not what it might have been in a more favorable season, was highly creditable to the State, and received the highest award provided by the society—the Wilder silver medal—"for the best miscellaneous collection of fruits, composed of apples, pears, peaches, plums, grapes, wild fruits and nuts," exhibited by the State Horticultural Society,

to whom the medal was awarded, and was placed, for safe keeping, in the State Library, at Lansing.

The exhibit from Michigan, as reported by the regular committee, consisted of 69 varieties of apples, 19 of pears, 23 grapes, 6 peaches, and 21 of other fruits and nuts, including wild fruits, berries, etc. To these are to be added the exhibit from Grand Traverse, 44° 40' north latitude, comprising 26 varieties of apples, 6 pears, 7 plums, 1 nectarine, 3 peaches, also two or three varieties of cherries, nearly all from the orchard of Judge Ramsdell. This exhibit also included a fine plate each of Golden Russet and Roxbury Russet, the growth of 1880. These, with the eight nicely put up and classified cases of insects from the State Agricultural College, with the large illustrated map by Secretary Garfield, conspired to constitute the Michigan exhibit, as characterized in the remarks of President Wilder, "the glory of the show," a characterization largely due to the resolute exclusion of all blemished, wormy, defective, undersized, and excessively large but worthless specimens and varieties.

On Wednesday, at 10 o'clock A. M., the society assembled at the Hawthorne rooms, on Park street, and was called to order by Marshall P. Wilder, who has been for thirty years its president. The large attendance included delegates from thirty States and territories.

President Wilder was continued at the head of the society; Patrick Barry, of Rochester, N. Y., was chosen first vice-president; Professor W. J. Beal, of Michigan, was elected secretary (Mr. Robert Manning having declined a re-election); T. T. Lyon was continued as vice-president for Michigan, and Charles W. Garfield was chosen chairman of the general fruit committee for Michigan.

During the afternoon session on Wednesday, T. T. Lyon, of Michigan, offered the following:

WHEREAS, The American Pomological Society recognizes the establishment of a correct and appropriate nomenclature as one of the first and most essential steps toward the general dissemination of correct pomological knowledge; and

WHEREAS, Our State and local agricultural, horticultural and pomological societies now are and seem likely ever to be, the chief means through which desirable improvements of this character are to be brought home to the great mass of our people; and

WHEREAS, There is, at present, little apparent harmony of action on this subject on the part of such societies generally, so far as the naming, displaying and examination of the fruits, as well as the principles upon which awards should be made are concerned; and

WHEREAS, Such lack of harmonious action may reasonably be, in a great measure, attributed to the want of a well digested and generally recognized set of ideas, principles, or rules, of universal application; therefore

Resolved, That a committee be appointed, charged with the duty of framing a set of such principles or rules, to be put forth and recommended by this society for the adoption and use of all, whether individuals or societies, who may have to do with the naming, classifying, arranging, exhibiting or judging of fruits, including also the naming of new or newly introduced varieties.

Resolved, That when such schedule of principles or rules shall have been framed and adopted by this society, its committees shall be required to govern their action thereby; and that it be the special duty of the committee on native fruits to report any departure from such rules, in the nomenclature of native fruits, that shall come to their knowl-

edge, in order that the society may be enabled to conform its own practice to the same.

Resolved, That measures be taken to give to the rules so adopted a wide publicity, accompanying the same with the suggestion to all societies and individuals in charge of exhibitions of fruits, that they be embodied in the premium lists and in the rules governing their exhibition and awards.

Resolved, That in pursuance of such purpose it be made the duty of the president of this society, at the opening of each biennial session, to appoint a committee on nomenclature, whose duty it shall be to supervise the nomenclature of fruits placed upon its tables for exhibition and to correct the same whenever needful.

The preamble and resolutions were referred to the committee on native fruits, with instructions to report as soon as practicable.

The committee on due consideration reported favorably, whereupon the resolutions were adopted by the society, and Mr. Barry, who presided in the absence of the president, announced the following persons as the committee contemplated by the first resolution, viz: T. T. Lyon, of Michigan; John A. Warder, of Ohio; John J. Thomas, of New York; C. M. Hovey, of Massachusetts, and P. J. Berckmans, of Georgia.

The effort of the chairman to secure a session of this committee prior to the society's adjournment proved futile, and the chairman was compelled to prepare a draft of the contemplated rules, a copy of which was sent to each member of the committee with a request for modifications or suggestions. On the return of these a second draft was made and was sent to the several members of the committee, and also to Vice-President Barry and to President Wilder for approval. This having received a unanimous concurrence, was the document reported at the subsequent meeting of the society at Philadelphia.

The session closed with a grand banquet given by the Massachusetts Horticultural Society in Music Hall. The only notable circumstance connected with this banquet which specially concerns Michigan was the response of Hon. W. K. Gibson for this State, substantially as follows:

MR. PRESIDENT—I appreciate the honor of being called on to respond to a sentiment so complimentary to the State to which I belong.

At its last session the Legislature of the State of Michigan, recognizing the importance of this meeting, directed the Governor to appoint commissioners to represent here the horticultural and fruit growing interests of the State and make an exhibition of its fruits. The display which you have deemed worthy of special notice is inferior in appearance and quality to what we are usually able to make in more favorable seasons.

Mr. President, we do not feel as though we were strangers here. Among its early pioneers Michigan numbered many from New England, and there has entered into our growth as a State much of the sturdiness and integrity of character and somewhat of the culture, characteristic of New England life.

The motto of our State is *Si Queris Peninsulam Amoenam Circumspice*; and, sir, if you seek for a beautiful peninsula, look upon her as she lies almost surrounded by the waters of the northern lakes. Every variety of soil, every diversity of climate are hers. In the southern portion are patches of prairie, with hills and valleys, and rivers and lakes, while at the north the waters of Lake Superior break against a coast as rocky and wild as that of New England. Of the fertility of her soil and its adaptation to the raising of all kinds of fruit, you have evidence before you to-day. Within her

borders are also vast forests of pine and also of hard woods, hardly equaled in variety by any State in the union.

From these forests, sir, within the past few days has gone up, as from a fiery furnace, a cry of suffering from destitute, homeless thousands, which touched the hearts of the east as well as the west, and which has met with such a generous response in this city.

Mr. President, it seems to me that the heart of this whole nation has grown very tender within the past few months. That bed of pain and suffering upon which the President had lain for so many weary days, watched over by a loving and heroic wife, has done more to awaken generous sympathy and bind together the different sections of the country than all the reconstruction acts ever passed by Congress. There can be no enmity in our hearts toward those whose fervent prayers have mingled with ours for the president's recovery. And to Boston, whose heart is ever tender and responsive to suffering, let me express the thanks and gratitude of our whole State for the generous donations you are sending to relieve those made destitute by the recent forest fires.

Mr. President, of the Massachusetts State Horticultural Society, allow me to say that this banquet is something more than a mere feast of good things. In this you have crowned and dignified what has preceded it. It comes naturally as a part of what we call the eternal fitness of things. For three days, sir, you have shown us the noblest fruits and the fairest flowers of your soil, and to-night, here in this room, we have had the pleasure of meeting the noblest fruits and flowers of your moral and intellectual culture. One speaker had said this evening, quoting from Emerson, that much of truth goes floating about the world in popular proverbs. Doubtless this is true, and there is an old saying that every New Englander, when he dies, expects to go to Boston. Now if this be true, and it probably is, let me express the wish that each soul may go by the way of Michigan, and thus escaping purgatory, reach here through paradise.

The closing of the sessions of the society on Thursday evening necessitated a prompt return home to be in time for the opening of the State fair on the following Monday.

The annual fair of the State Horticultural Society for 1881 was held at Jackson, on September 19th to 23d, in connection with that of the State Agricultural Society. The exhibit was made in the rather poorly lighted hall occupied at the last exhibit of the society held on the same grounds.

The entries, amounting to one thousand last year, were this year increased to above twelve hundred.

Collectors found more than the usual difficulty in securing perfect specimens, which was only done by giving extra time and labor to the work, with the result of securing a highly creditable exhibit. Several members of the executive committee of the State Agricultural Society, who had for years watched our exhibits, remarked that they had every reason to be well pleased with this one.

Entries were received from Illinois and also from the State of New York, as well as from sixteen counties of this State.

During the year efforts were made to awake an interest in the matter of improving country school grounds, and an offer was made by the firm of D. M. Ferry & Co., of Detroit, to send a collection of flower seeds to the children of the first five school districts in each county in this State, whose teachers should make application for them in the prescribed form.

Specific directions for preparation of the soil, planting and subsequent treatment accompanied the seeds.

Under these offers eighty-one applications were received for seeds, and the reports demonstrate that they were mainly successful, and, moreover, that in all cases the scholars became interested and efficient helpers, while the flowers proved valuable aids to the teachers in their work, as well as sources of amusement, refinement and elevation to all concerned.

Encouragement may also be drawn from the circumstance that, in some cases at least, the influence thus exerted resulted in arousing an interest among the patrons of the schools, which resulted in the improvement of the homes of the children.

Whatever may be the conclusion as to the propriety of the endeavor to grow flowers upon school grounds, the fact may be regarded as already demonstrated that the difficulty in the way lies in the indifference of the teachers and the patrons of the school rather than in the danger of injury by the pupils.

The annual meeting of the State Horticultural Society convened at South Haven, on December 5th to 7th, 1881, upon the invitation of the South Haven Pomological Society.

Among delegates from other States were S. D. Willard and J. S. Woodward, of western New York; H. P. Hanford, of Indiana; R. C. Barnard, of Illinois; and J. R. Rupert, of Iowa.

The display of horticultural products was unusually fine, a fact doubtless due, at least in part, to the offer by the society, of premiums for meritorious exhibits of apples and pears, and also for house plants.

The meeting was called to order by the president at 8 p. m. on Monday and the society was welcomed by J. Lannin, president of the South Haven Pomological Society, in an appropriate address, which was responded to in a few words by the president of the visiting society.

Upon the question, "Can Horticulturists do Something to Counteract the Effects of our Severe Droughts?" irrigation, cultivation, the use of salt, mulching and the plowing under of green crops, were all more or less discussed, but without reaching a definite conclusion.

The committees for the occasion were then announced by the president.

The morning session on Tuesday was opened by W. W. Tracy, of Detroit, on the topic of "Vegetables—The Market and Kitchen Garden."

He preferred that the farmer's garden should be in an open field, or otherwise in an oblong, rectangular enclosure, and that everything be planted in rows, with an eight foot clear space at each end to facilitate turning when cultivating. His ideas were illustrated by a plan.

E. M. Potter, Kalamazoo, followed with a paper on "The Farm Garden," in which he gave his recollections of the garden where, in western New York, "he specs he fustest started to grow," adding the ideas that had come to him later in life, and, with his peculiar quaintness, remarking, "now, if any of my neighbors are here, please don't amuse anybody by saying 'you just ought to see his garden once.'"

The subject, including the modes of starting early plants and keeping them through the winter, was quite fully discussed.

Professor W. J. Beal, then gave an address on "What Can Botany do for Horticulture?"

His definition of horticulture, which has the merit of more correctly ex-

pressing its modern scope, is "A department of agriculture, including pomology, floriculture and vegetable gardening. It is intimately related to arboriculture, and landscape gardening, and is almost inseparable from botany."

The steps were traced, somewhat in detail, by which the the technical botany of thirty or forty years ago has been remodelled or transformed into the practical or economic botany of a more recent period.

In closing, the professor remarked, "In very many respects, then, botany will make a horticulturist more capable. It will make him a good observer, improve his reason, strengthen his judgment, cultivate his taste, broaden his views, weaken his respect for the tradition of his fathers. It will sharpen his wits, make him an investigator, and help to make him a better neighbor and a better citizen."

At the close of his address the professor was plied with questions freely.

Professors Cook and Tracy closed the discussion by giving some illustrations of important economic results from the deductions of pure science, and urged the advantages to be anticipated from its application to horticulture.

The afternoon session was opened by Professor A. J. Cook with a paper on "New Insect Pests, and New Ways of Fighting Old Ones."

Bisulphide of carbon was spoken of, and experiments with carbolic acid detailed. He then went on to say that he had received a cigar box full of insects from Grand Rapids, which were part of about a bushel destroyed in one night by the electric lights of that city.

He farther mentioned the greater variety of insects supposed to congregate at South Haven, as the result of its varied fruit growing interest, the ease and economy with which an electric light establishment could be operated here, and the honor to accrue to the place by emulating the example of Paris and at the same time solving the problem of the sufficiency of this new appliance as an insect destroyer.

He had been very successful in the destruction of the codling moth larvæ by spraying the trees with Paris green, but hesitated to recommend the general use of so virulent a poison.

J. S. Woodward spoke of this as eminently successful in western New York.

A paper, by H. D. Cutting, on "Bees and Grapes" was next read.

He had been engaged for years in experimenting, and demonstrated to his own satisfaction that bees will only attack grapes after the rupture of the skin.

The discussion developed differences of experience, though with the apparent preponderance of testimony in favor of the bees.

The secretary next read a paper by Professor Burrill, of Illinois Industrial University, upon the question "Have we any New Light on Pear Blight or Yellows?"

The paper contained much valuable information, stating that nothing new had been elicited concerning yellows, that the blight of the pear, the apple and the Lombardy poplar were assuredly from the same cause, and that therefore the Lombardy poplar must be considered a dangerous neighbor to the orchard.

He was, as yet, unable to suggest any new or better remedy than that of stamping out the disease as already practiced.

The closing paper of the afternoon was by Professor T. J. Wramplemeier, of the State University, upon "Poisons, and their Use as Insect Extermina-

tors," in which the various arsenical compounds, with the objections to their use were considered, as were also several vegetable substances, alkalies, etc.

The Tuesday evening session opened with a paper by R. Haigh, jr., of South Haven, on "Rural Improvement," in which some severe, though merited blows were dealt at the condition of the streets, walks, parks and cemetery of the village and its vicinity, and the desirableness of a rural improvement society suggested.

"Improvement of School Grounds" was next considered in an address by Professor Ross, of the South Haven school, much in the view of Mr. Haigh's paper, and containing valuable suggestions as to needed improvements of the school grounds of the village.

A short but interesting discussion followed, at the close of which Mr. Mann, the chairman, took occasion to congratulate the people of South Haven on the admirable preparations made for the reception and comfort of the horticultural society.

The Wednesday morning session opened with the president's annual address, giving a statement of the operations of the past year and suggestions with reference to the future.

The secretary's annual statement followed, giving a careful history of the past year's doings in his department, together with a statement of disbursements during the year.

The report of the treasurer showed a balance in his hands to the credit of the general fund of \$812.54.

The amount of the life membership fund in the hands of the treasurer was \$1,310, besides \$350 yet in the hands of Ex-treasurer Adams, making the total of this fund \$1,660.

The officers elected for the ensuing year were:

President—T. T. Lyon, of South Haven.

Secretary—Charles W. Garfield, Grand Rapids.

Treasurer—S. M. Pearsall, Grand Rapids.

Members of Executive Board—A. D. Healy, South Haven; E. H. Scott, Ann Arbor.

Also the usual number of vice-presidents.

The discussions of the afternoon opened with an address by Charles J. Monroe, giving some statistics of fruit shipped from South Haven during the past season. Of peaches there were shipped 235,040 baskets; apples, 18,114 barrels; grapes, 33,000 baskets; berries, 8,450 cases.

Amount paid through the South Haven bank.....	\$135,012 99
Estimated amount received through other mediums.....	20,000 00

Total value of fruit shipped.....	\$155,012 99
-----------------------------------	--------------

Mr. Williams, one of the yellows commissioners, had examined 71,353 peach trees in the vicinity of South Haven, during the past season, and the loss by yellows had been only $7\frac{1}{3}$ per cent. In 1879 the loss from that disease had been $4\frac{1}{2}$ per cent, and in 1880, $12\frac{1}{2}$ per cent.

The discussion was followed by a short paper from G. H. La Fleur, of Allegan, on "Commercial Fruit Growing," which proceeded upon the idea that the apple is the most profitable fruit so far as ultimate results are concerned, and that Michigan has advantages which place her in the van so far as commercial fruit culture is concerned.

J. N. Stearns invited attention to the question "How much Profit is there in Care?" saying, in effect, that it, to his apprehension, expressed nearly or quite all the profit to be found in apple culture.

"The Effect of a Reputation in Marketing Fruit" was shown in a short note from S. B. Peck, of Muskegon, read by the secretary, as follows:—

"In 1869 my brother, Frederick B., sent, among many other barrels of pears, to his commission agent in New York, one of specially selected and uniform specimens, containing 153, by count. This was sold to a retailer for fifty dollars. In 1870 another barrel of the same count sold for the same price, and in 1871 another barrel, counting 126, sold for forty dollars. These pears were of his own raising, of the Angouleme variety, and the barrels intended to hold two and a half bushels each. The fruit was simply laid in bare, the head pressed in and nailed. As to any secret about the prices, the facts were that his name as grower and shipper, with the count on the head, was before known as a reliable guarantee as to count, size and condition. It is further related that the retailer, on opening one of these barrels, readily sold to one person twenty of these pears for one dollar each. My brother then lived in Ontario county, New York."

A letter was read from F. B. Johnson, of Lansing, on "Market Apples in Central Michigan," putting Red Canada at the head of the list for profit.

Granville Cowing, of Muncie, Indiana, was quoted as saying, "I have carefully tested every blackberry of especial promise that has appeared since the introduction of the Lawton, and have found but three varieties that have proved profitable in this latitude—Snyder, Wallace and Taylor."

T. T. Lyon then read the report of the committee on new fruits.

The committee on fruits exhibited awarded the first premium for market apples to F. H. Parker, of Eaton Rapids, for Baldwin, Red Canada, and Northern Spy. Second, to J. N. Stearns, Kalamazoo, for Baldwin, Jonathan, Red Canada.

For cooking apples, first, to J. N. Stearns, Kalamazoo, for Rhode Island Greening, Northern Spy, Baldwin. Second, to Emmons Buell, Kalamazoo, for Northern Spy, Rhode Island Greening, Wagener.

For dessert apples, first, to D. C. Loveday, South Haven, for Jonathan, Melon, Red Canada. Second, to Emmons Buell, Kalamazoo, for Jonathan, Red Canada, Northern Spy.

For finest plate apples, first to Emmons Buell, Kalamazoo, for Tompkins King. Second, to J. M. Blowers, Lawrence, for Red Canada.

Finest plate pears, first to Henry King, South Haven.

The display of fruits, aside from those awarded premiums, was large, fine, and in unusual variety.

The committee on delegations reported eleven local societies represented aside from the delegates from New York and Indiana, and a large number of visitors not delegates from societies.

At the opening of the session of Wednesday evening W. W. Tracy, chairman of the standing committee on garden vegetables, submitted a report on several articles of comparatively recent introduction.

The remainder of the session was devoted to the announcement of sentiments by Secretary Garfield, with responses by persons called out for the purpose.

At the conclusion of this exercise the committee on resolutions submitted their report through Professor Charles D. Lawton, their chairman, which was adopted by a rising vote.

The convention then joined in singing "Praise God from Whom All Blessings Flow" and adjourned.

At a session of the executive board held during the annual meeting at South Haven an invitation was received from the State board of agriculture to nominate a suitable person for professor of horticulture at the Agricultural College, one through whom the society could cordially coöperate with that department of the institution.

On motion of Mr. Gibson Secretary Charles W. Garfield was proposed for such position; but, owing to objection on his part, the subject was laid upon the table.

The executive board adjourned to meet at Jackson on December 19th, 1881, at which time and place a session was held, and Messrs. Scott and Healy, the incoming members, being present, were invited to participate in the proceedings of the board, together with Professor Beal, who was also present.

It was decided to hold the winter meeting of the society at Hudson, in response to the invitation of the Lenawee and Hillsdale Farmers' Association, and S. B. Mann was deputed to make the preliminary arrangements; also, if practicable, to arrange a series of premiums on exhibits by private subscription.

The Ingham County Horticultural Society was allowed the use of the rooms of the society in the capitol in which to hold its monthly meetings.

Mr. King, who had acted as librarian for the previous year, was unanimously re-appointed to that position, and he was moreover tendered the gratitude of the board for the efficient manner in which he had discharged the duties of the office.

A resolution was passed thanking the State Board of Auditors for aid in the boxing and shipping of our annual volumes.

A. C. Glidden, C. D. Lawton and C. Engle were delegated to attend the meeting of agricultural societies to be held at Paw Paw the last of January, 1882.

Treasurer Pearsall reported the amount of life membership fund in his hands at that date to be \$1,310. He was instructed to transfer the sum of \$350 from the general fund to the life membership fund, making the latter to correspond with the actual number of life members.

A device for a seal was adopted and the secretary was instructed to procure one accordingly.

The board, after due consideration, determined to continue the work of organizing local societies, and a fund of \$100 was set aside to provide for the expenses of the secretary in such work.

The matter of the appointment of a professor of horticulture at the Agricultural College, laid on the table at the last meeting, was further considered, and the name of Charles W. Garfield was proposed for the position. It was further proposed that, in case of the inability of Mr. Garfield to accept such position, Professor W. J. Beal be relieved of his duties as botanist and that he receive the appointment of professor of horticulture. The president was instructed to communicate the above to the Board of Agriculture.

The arrangement and adjustment of the premium list for the fair of 1882 was committed to T. T. Lyon to be reported at the next meeting of the board.

A vote of thanks was tendered to D. M. Ferry & Co. for efficient aid in the

effort to encourage the ornamentation of school grounds by a free distribution of seeds, accompanied by directions for their treatment, and they were requested to still further coöperate by continuing such offer with the assurance of the coöperation of this society by offers of premiums or otherwise.

The board adjourned to meet at Jackson on the day previous to the meeting of the society at Hudson.

Such meeting was held as proposed, but its doings were of routine character.

On February 28th, 1882, the State Horticultural Society met for its regular winter meeting, at Hudson, Lenawee county, upon the invitation of the Farmers' Union Association. President John Harkness of that association called the meeting to order, when a cordial welcome was extended to the Horticultural Society by Dr. Smart, the village president, which was followed by a response by the president of the Horticultural Society.

S. W. Dorr, of Manchester, opened the session with a paper on "Buildings for Keeping Winter Fruit," in which he treated the question what is to be done with a supply of apples in excess of the demands of the market by proposing the use of fruit retarding houses, without resort to ice as the means of refrigeration, illustrating by means of such a building of his own construction.

The discussion which followed the reading of the paper brought out the alleged fact that fruit, kept without the use of ice in Mr. Dorr's retarding house, and marketed in May, commanded prices fifty per cent above similar fruits kept in a refrigerator, on account of its superior ability to resist decay.

S. B. Mann followed with a short paper on "Modern Improvements in Horticultural Implements," and suggested the possibility if not indeed the probability of more wonderful improvements in the near future.

The subject of implements was still farther considered by E. M. Potter, of Kalamazoo, more especially with reference to the keeping of them in order, and the greater liability of complex implements to need care in this particular.

Mr. A. D. Healy, of South Haven, next opened the subject of "Fruit Packages," stating his view to be "let a quart package hold a full quart, let a peck hold eight full quarts, don't try to cheat but be honest, and in the end it will pay handsomely. Every packer of fruit should use a package upon which he is not afraid to put his name and address. A short package is not a good advertisement. There is a heap of dishonesty in packages sent out of western Michigan."

The evening session was opened by Professor Tracy, of Detroit, with an address on "Seeds," illustrated by drawings. He started out with the remark:—"Seeds, how are they made, and what are they made for, are questions which will be asked by thousands of children and, possibly, by some grown people." After illustrating the numerous similarities existing between seeds and plants, and the similar purposes to which they are often devoted, he draws his conclusion as follows:—"Seeds, then, are simply plants packed with the omnipotent wisdom and skill of the Divine hand for transportation. What is the practical bearing of this fact? Simply this, that when a farmer goes into his field, with his seed corn or wheat, he carries with him the future possibilities and limitations of his crop, as completely as when he takes out a load of trees to set in his orchard; indeed, more so, for it is not practicable to change the character of his corn and wheat plants by grafting or budding as he can do in the case of his trees. His seeds planted, the character of his crop is determined. He may secure a more or less perfect development of the

fruit, just as he can, by cultivation, grow fine fair fruits or miserable scabby ones upon his Baldwin apple tree. But he can no more change its character than he can grow Greenings on Baldwin wood, or make, by extra care and feed, a short-horn bull out of the new born Jersey heifer calf. If these are facts (and I honestly believe I have stated them fairly), can we pay too much attention to the matter of the selection of our seed grains, and do not the farmers of Michigan owe Professor Beal a debt of gratitude for the constant and earnest persistency with which he has urged them to do this, and the practical methods of so doing, which he has so frequently and clearly described?

E. M. Potter pursued the same general topic in the discussion of the subject of "Michigan Nursery Stock," holding that it is quite practicable to grow as good nursery trees in Michigan as elsewhere, and that lack of rapid growth here is fully compensated by increased hardiness. He speaks of "canvassers" thus: "We shall always consider a real wide awake and competent canvasser, who is strictly honest with his customer and true to his employer, as a desirable attache to the business, and one of the noblest and rarest productions of the craft. Such an one, like the standard dollar, ought to be well received everywhere; but I am sorry to say that too often the glittering counterfeit is taken at a premium, while the genuine gets both 'clipped and punched,' if not wholly rejected."

Injury both before and after planting, as well as in digging and packing, were considered, and both in the address and in the subsequent discussion the idea seemed to prevail that losses consequent upon ignorance and carelessness on the part of the planter were too frequently laid at the nurseryman's door.

Primary horticulture was illustrated by Professor Beal by giving an account of how his young daughter was drawn to take an interest in the practical operations of gardening. The details of the process were so simple and commonplace as to induce covert remarks of a disparaging character, but the effect was none the less certain and the lesson none the less valuable on that account. More practice of a similar character would doubtless add very satisfactorily to the ranks of our young horticulturists.

On Wednesday the morning session opened with a paper by E. D. Pierson, entitled, "The Orchard as an Adjunct of the Farm." The essay is a practical history of the educational experiences of an orchardist in connection with farming, from the initiatory steps to the planting and management of an extensive market orchard.

A most valuable thought is that of the necessity of protecting the trunk of an apple tree from the attacks of borers when its vigor becomes checked by pruning, grafting or other cause.

C. B. Stowell, of Hudson, gave an address on "The Garden as an Adjunct of the Farm."

Fruits, vegetables and flowers were separately considered and each deemed essential to a well constituted farm garden.

This address and those of Secretary Garfield and Hon. Thomas F. Moore, of Madison, which followed it, drew from Professor Beal a letter recently sent him, saying a certain school district had appropriated \$25 to buy trees with which to ornament their school ground, and asking him to tell them "how to fix it."

In closing his remarks the Professor offered the following:

Resolved, That, in the opinion of the Michigan State Horticultural Society, the grounds about a country school-house ought to be at least one acre in extent.

After further discussion of the whole subject of ornamenting school grounds, the resolution of Professor Beal was unanimously adopted.

"Horticulture In and About the House" was the subject of a paper by Mrs. Mary N. Allen, in which are set forth the increased attractions with which fruit culture is wont to surround the home.

B. W. Steere next gave a paper upon "Horticulture on the Highway," full of suggestions respecting the beneficial influence of trees along the highway, as well as of hints as to the increased values thus communicated to adjacent property.

The use of fruit trees for roadside planting was considerably discussed, but with an apparent preponderance of opinion against their use for such purpose.

The afternoon session was opened by prayer and music, after which the subject of "Honest Packing" was discussed.

E. H. Scott opened the discussion with the remark that honest packing is the key to permanent success in market fruit culture.

Porter Beal remarked, "There seems to be several grades of honesty. I find the same grade of men who yesterday or this forenoon advocated 'enlivening' the packages by means of colored netting, this afternoon urging that there be greater honesty in packing. It seems that a grade of honesty that is good for one set may be pretty tough for another.

T. T. Lyon made some remarks, illustrated upon the blackboard, on "The Knife, When and Where to Use it," stating that nurserymen, with the present low price of trees, are compelled to grow them so closely that proper branching becomes impossible. For this reason the planter, who is wise, will purchase trees of not more than one or two years' growth. His ideal for trees was a central shoot with not more than four or five side branches.

The pruning of peach trees was also discussed, including the proper way to avoid or prevent the formation of crotches, as well as what is known as the shortening in process.

"Advertising at Fairs" was the subject of some remarks favorable to the practice both as to old and new varieties.

Hill's Chili peach was named as the best market peach on account of its productiveness and hardiness. It was objected to by others as excessively productive and therefore inclined to be small and the tree short-lived.

The evening session was opened by A. D. Healy with a paper entitled "Education and Horticulture," in which was urged the great importance of an association of the two.

Secretary Garfield was called on to speak of the subject of "Horticulture in Schools" and took occasion to speak of the difficulties encountered and of some of the steps that had, so far, proved most effective toward their solution.

"Horticulture in the Home" was the subject of a short paper by Dr. Woodland Owen, of Adrian.

R. T. McNaughton, of Jackson, supplied the next paper on the subject of "Horticulture as a Part of Industrial Education," in which the writer urges the value of an acquaintance with horticulture even to those who may not purpose to make it their chief pursuit.

The subject of the closing discussion was "Associations in Educating Hor-

ticulturists," coupled with the subject of "Experience and Observation in Horticulture."

After a short discussion of these topics and an interesting piece of music, reports of committees were called for.

The committee on fruits exhibited, in the course of their report, remark: "Considering the extremely dry summer and the premature ripening of fruit in the fall, your committee unite in the decision that the exhibition is worthy of credit for the fruit exhibit at this time of the year, especially when such varieties as the Sweet Bough, Early Harvest and Maiden's Blush are in such condition as exhibited by Mr. Dorr, of Manchester. These, of course, were kept by the refrigerator process and show what can be done.

After the adoption of a series of appropriate resolutions the society adjourned.

The death of James Vick occurred at his home in Rochester, New York, on May 16th, 1882. He was born in Chichester, England, in November, 1818; removed early in life to the United States, and was for a time in charge of the Horticultural Department of the Genesee Farmer, and was, subsequently, connected in a similar capacity with Moore's Rural New Yorker. He was also, at one time, secretary of the American Pomological Society. His connection with the New Yorker was closed to leave him at liberty to take up his great life work, in which he continued till his death. "No man has ever lived and died in our country that has left so beautiful and so permanent an impression upon the homes of our people."

The summer meeting of the State Horticultural Society occurred at Pentwater, on June 20th and 21st, 1882, upon the invitation of the Oceana County Horticultural Society.

The society was welcomed by President C. A. Sessions, of the local society, followed by a response by the president of the visiting society.

The first topic—"What Societies do for Horticulture"—was opened by a paper from Wm. A. Brown, of Stevensville.

The paper supplied matter for a somewhat extended discussion, after which, Mr. T. S. Braman, of Shelby, read an essay in continuation of the subject, and this again was supplemented by a discussion upon several matters; among which was the "need of a State Entomologist," the "curculio and the leaf blight and rot of the plum," and the "leaf curl" of the peach, which last had just, at this time, nearly or quite ruined the foliage of the peach trees of this vicinity where destitute of shelter from the lake winds.

The evening session was opened by replies and discussions of a few questions from the question box, including "Thinning Fruit" and "Cutting Back Shoots," "The Best Strawberry for Market," and "The Excessive Fertilization of Soils."

Mr. Garver, of Hart, gave the first paper of the evening on "Marketing Fruit," suggesting the importance of organizing to secure the possible facilities of the shipment of the fruit product of the region, insisting also upon the importance of assorting fruits into grades.

"Our Soils" was the topic of an essay by James Brassington, of Oceana county, which was followed by a short discussion, when the question box was resorted to. The first question was on the "Best Method of Treating Pear Blight."

No better remedy was proposed than to cut away the diseased wood and to disinfect by means of carbolic acid.

Why shake trees for curculio in the morning, as recommended by the books, when the insects are doing their work only in the warm parts of the day?

George C. McClutchie, of Ludington, replied, "To be sure the curculio must have it warm enough so he is not numb, in order to pursue the object of his life, still in the days of early summer he can get at business very early in the morning. This past season, however, we have had remarkably cool nights and are still having them, so the curculio remains quiet until the sun is well up. During warm mornings it is best to be at the business of catching pretty early, while, in cool days the best success is had in the middle of the day."

Mr. Brown—In cool weather the Ransom chip process may supplement the jarring process.

Mr. Smith, of Benton Harbor, had found a wet sheet preferable in the middle of the day. He thought the curculio often a blessing by preventing the trees from overloading.

On Wednesday morning the first topic was "Transportation of Fruit."

The secretary stated the following regulations to exist on the Illinois Central Railroad, for shipments in car lots:

1. A car load is 16,000 pounds or less.
2. Consignor attends to loading cars.
3. Railroad company sees that correct weights are given, cars properly locked and sealed and billed to person designated by shipper.

By this method the owner looks after his own fruit, and if there is carelessness in handling it is his own fault.

The secretary thought it was not advisable for the society to take action in such a matter, but that this gathering of fruit growers was an appropriate occasion for its discussion.

W. A. Brown—Local societies should do this. We have settled the question in Berrien county and have such arrangements as we desire.

On motion, H. H. Holt, Muskegon; J. H. Sammons, Oceana, and W. A. Brown, Berrien were appointed a committee to take charge of this whole matter.

"The influence of Water on Our Climate" was the subject of a paper by J. H. Sammons, of Sammons' Landing, who regarded their location on Point Sable, jutting out far into Lake Michigan, as a very favorable one. The paper elicited considerable discussion, and was followed by T. T. Lyon, with a paper on "Wild Fruits and their Improvement," treating somewhat at length upon the opportunities for the production of possibly valuable novelties from these sources by subjecting them to artificial treatment, and to the process of hybridizing.

At the request of J. J. Hubbell, of Benzonia, "Varieties for the North Shore" were next discussed. He said: We are not old enough in Benzie county to know just what we do want or what it is most desirable to have. Yet, as the years come and go, leaving with us bits of experience, we are getting at lists of varieties that seem best adapted to our climate. Of the Red Canada, which is so much lauded in the southeast of our State, we have but two bearing trees in our county, but we have done a good deal of topgrafting to this sort. The Golden Russet stands at the top of the list for market.

The county pomological society have framed the following list for family purposes:—

Summer—Early Harvest, Sweet Bough, Primate, Red Astrachan, Benoni, American Summer,

Autumn—Hawley, Lowell, Gravenstein, Jersey Sweet, Porter, Maiden's Blush, Chenango.

Early Winter—Belmont, Fameuse, Bailey Sweet, Westfield.

Late Winter—Talman Sweet, Golden Russet, Wagener, Red Canada, Northern Spy.

A warm discussion followed, mainly respecting market varieties and the importance of quality in market fruits.

At the opening of the evening session, half an hour was given to questions from the question box, in reply to the last of which—"How Best to Fight the Pear Slug?"—the secretary read a letter from S. W. Fowler, of Manistee, who, after trying various remedies, applied Paris green diffused in water, using a spraying apparatus with a force pump, with entire success.

"Oceana County for Fruit" was next treated in a paper by Mr. Hartwicke, of the Pentwater News."

Senator Ambler followed with an address on "The Value of Fixity in Rural Life," abounding in pith, humor and bandinage, and was followed by E. M. Potter, of Kalamazoo, in continuation of the subject.

D. L. Garver read an essay on "People and their Surroundings," the surroundings considered those more particularly of a horticultural character.

The deduction was that the surroundings in large measure indicate the character of the people.

The committee on transportation reported, in effect, that the subject committed to them was more especially calling for action on the part of local societies.

After reports of committees and appropriate acknowledgment of courtesies received, the society adjourned.

At a meeting of the executive board, held during the meeting at Pentwater, the vacancy upon the board occasioned by the removal of N. Chilson, was filled by the appointment of J. N. Stearns, of Kalamazoo, such appointment to continue until the next annual meeting.

The vacancies in the business committee were filled by appointing James Satterlee and J. N. Stearns members, with Evart H. Scott as chairman.

With the purpose of ascertaining the condition of the Michigan fruit crop, and gaining an indication of the probable amount of work required to get ready for the fair, the secretary, in August, sent out one hundred postal cards, in envelopes, to prominent fruit growers, asking them to return the percentage of an average crop promised by the orchards and vineyards as the crop of 1882.

In reply only one correspondent puts the apple crop at a full average, while thirty-four place it at less than one-fourth of a crop; fifty report it less than one-half of a crop, and seventy-five less than three-fourths of an average. The most promising shows of apples are reported from Ingham, Bay, western Muskegon, Manistee, Genesee, Allegan, Macomb, Lapeer, western Cass, western Kent, Central Barry and eastern Ottawa; all state that the fruit will be imperfect, scabby and badly injured by insects.

Pears promise seventy-five per cent of a full yield.

Peaches, in favorable locations in the interior, half a crop; on the southern lake shore two-thirds of a crop.

Grapes promise a full crop, but with some tendency to rot in infected localities.

Plums a good average where the curculio has received the requisite attention.

The yellows is gradually working northward. A few "sporadic cases" are reported as far north as Ottawa and Kent counties.

The State Fair of the Agricultural and Horticultural Societies was held at Jackson, on September 18th to 23d, 1882.

The number of entries made with the secretary of the State Horticultural Society was twelve hundred. The fruits occupied twenty eight hundred plates, covering two thousand feet of shelving.

For the purpose of securing a display of taste in ornamentation at this fair, the side walls of Horticultural Hall were divided into eight sections, and two sets of premiums were offered for the best specimens of ornamentation thereon. The exhibits failed to meet the expectations of the committee, and but two of the lower premiums were awarded.

At a session of the executive board held at Jackson, September 21st, 1882, it was determined to defer the next publication of the State Catalogue of Fruits till 1884, and to issue the revision of the same biennially thereafter.

A diploma was ordered to be issued to James Vick for a large and beautiful exhibit of flowers at the State fair.

C. W. Garfield submitted his report as delegate to the American Forestry Congress.

The annual meeting of the Michigan Horticultural Society was held at Flint on December 4th to 6th, 1882, with a large attendance from abroad, and a superior exhibit of fruits and plants. The society was welcomed by Mayor Atwood, and a response was made by the president.

The first evening was opened with a lecture by Professor Cook on the subject of "Evolution."

On the following morning the session was opened by an essay from W. C. Hutchinson, of Rogersville, entitled, "Bees in their Relation to Horticulture," urging their beneficial action in the cross fertilization of the flowers of many of our fruits, and denying that they attack grapes unless the skins have been previously pierced by another cause.

The discussion following this essay covered the subject of cross fertilization.

A. L. Aldrich followed giving the "Horticultural Statistics of Genesee County," for which see the history of that county.

A discussion of the paper was then had; after which

C. T. Rosenkrans read an essay giving the "Best Five Varieties of Market Apples for Eastern Michigan." The five varieties named were Red Canada, Baldwin, Northern Spy, Rhode Island Greening, and Golden Russet.

This was followed by the annual message of the president, containing various suggestions with respect to future operations of the society.

The afternoon session was opened by a discussion on the topic of "Increasing the Profits of Fruit Growing," which aroused a long and animated discussion, covering jellies, jams, canning, drying, refrigerating, honest and dishonest packing, good cultivation, wise selection of varieties, etc.

The "Wager Peach" was the subject of an essay by H. W. Davis, of Lapeer, which was commended for its hardiness and its ability to reproduce itself from the pit. It was said to have been introduced into Ontario county, New York, over sixty years ago (prior to 1819).

A. S. Partridge, of Flushing, followed with a paper on "Stone Fruits for Genesee County," giving lists of cherries, plums and peaches which had been found to succeed in Genesee county.

T. T. Lyon followed with a paper on the "Vine, its History, Species and Hardiness, Propagation, Pruning, Training, etc."

During the evening session I. H. Butterfield, of Port Huron, read a paper on "Tariff Laws Concerning Horticultural Products," giving a pretty full review of the duties on fruits and seeds, with some idea of the kinds and quantities imported.

"The Structure and Growth of a Tree" was the subject of a paper by Professor W. J. Beal, of the Agricultural College, which was illustrated by charts and drawings. The lecture was exceedingly interesting and instructive and proved the occasion for numerous questions at its close, covering, as it did, the subjects of growth, ripening, seeds, planting, winter protection, etc.

On Wednesday morning the report of the committee on plants was received and adopted.

T. T. Lyon, chairman of the committee on new fruits, submitted the committee's report, which was accepted and ordered printed.

The annual statement of the librarian was next received and was followed by those of the treasurer and secretary, which states the total disbursements of the society for the year 1882 at \$1,430.96.

The following officers were elected for the year 1883:

President—T. T. Lyon, of South Haven.

Secretary—Charles W. Garfield, of Grand Rapids.

Treasurer—Sherman M. Pearsall, of Grand Rapids.

Executive Board—James Satterlee, Lansing; J. N. Stearns, Kalamazoo; to fill vacancy, John Abbott, Lapeer.

A paper was read by B. Gott, delegate from the Ontario Fruit Growers' Association, entitled, "Fruit Culture and Character Building," which, as implied by its title, dwelt largely upon the happy influence of horticulture in elevating and refining the character of its devotees.

After a short discussion upon the matter of the distribution of the society's reports, Clarence M. Weed gave an essay on "Injurious Insects, New in Michigan," which, with the subsequent discussion, elicited much that was interesting and valuable.

The committee on resolutions were instructed to embody in their report an appropriate notice of Hon. J. Webster Childs, long a member of the society, and recently deceased.

P. C. Dempsey, of Ontario, gave an account of the management of the Ontario Fruit Growers' Association, which includes the publishing of a monthly periodical, together with the propagation and distribution of new and valuable trees and plants, the financial aid of the government being afforded for these purposes.

J. C. Sterling spoke of the pleasant relations existing between the State Agricultural and Horticultural Societies, which, he trusted, might long continue.

"The History of the Potato—its Culture and Varieties," was the subject of the opening paper of the afternoon, read by James Satterlee, of the Agricultural College. This was followed by a very full discussion of the subject of the tendency of this esculent to deteriorate under the usual modes of cultivation.

This was followed by a paper from Judge Geo. W. Lawton, of VanBuren county, read in his absence by the secretary, entitled, "Forestry and Ornamental Planting." He treated the subject from the scientific standpoint, and pleaded for the intervention of law to stay the reckless waste, and to encourage replanting.

"Landscape Gardening for Small Places," was the subject of a letter from R. Haigh, Jr., chairman of the standing committee on landscape gardening, giving many useful hints respecting the principles to be applied in the improvement of such places, and the subject was continued in a somewhat lengthy discussion.

The final evening session was mainly given up to social exercises, consisting of responses to sentiments, freely interspersed with excellent music, rendering the occasion a very enjoyable one.

W. W. Hilborn, of Arkona, Ontario, occupied a few minutes with some account of the condition of fruit culture in his vicinity.

P. C. Dempsey made a very flattering report on behalf of the committee on fruits exhibited.

A large exhibit of potatoes was reported by the committee, but the varieties were not thought to be the best for cultivation in Michigan.

The exhibit of syrups, jellies, wines and honey was reported as very fine, including a specimen of tea grown and prepared in South Carolina, which the committee found to be of fine quality.

The committee on resolutions being called submitted a report, including a feeling reference to the death of J. Webster Childs, of Ypsilanti, which were accepted and adopted, whereupon the society adjourned.

At a session of the executive board, held at Flint, December 5th and 6th, the resignation of Librarian F. W. King, on account of failing health, was accepted, and Thomas H. Forster was appointed to fill the vacancy.

During the winter of 1882-3, a proposition was talked of in certain quarters to re-organize the State Board of Agriculture, create a State experiment station, and place that, together with the Agricultural College, the collection of crop statistics and some other matters under their charge, and steps were taken to bring the proposition before the legislature in the form of a bill, but so much opposition was manifested in unexpected quarters that the attempt was very soon abandoned as impracticable.

The records of the executive board show that a final settlement was effected with Ex-treasurer H. Dale Adams and balance due the society paid by him on February 26th, 1883.

The winter meeting of the State Horticultural Society was held at Marshall, on March 8th, 1883, the meeting having been fixed at a later date than usual on account of the absence of the president at New Orleans, as delegate from the society to the meeting of the Mississippi Valley Horticultural Society.

The meeting was called to order by President Hubbard, of the Calhoun County Agricultural Society, who introduced the president of the State Horticultural Society, after which the secretary's correspondence was disposed of.

B. G. Buell, of the Volinia Farmers' Club, followed with a paper, replying to the question, "What Inducements have Farmers for Increasing Their Apple Orchards?" The tenor of the paper was to the effect that while, with unfortunate choice of varieties and lack of intelligent care, many orchards prove unprofitable, with an intelligent adaptation of varieties to soils, and judicious and liberal after management, the orchard will prove decidedly more profitable, acre for acre, than grain, with far less outgo in case of the occasional loss of a crop.

J. N. Stearns followed with a paper entitled "How to Make Our Orchards Pay." The means proposed were thinning, offering only prime fruit, honest packing, and proper choice of varieties.

A long and animated discussion followed, covering almost the entire subject of orchard management.

Joseph Lannin, of South Haven, followed with a paper on "Where and How to Plant Peach Orchards."

Under the question "Where," he mentioned elevation and freedom from excessive moisture. In considering "How," twenty feet apart was given as the distance, a thorough preparation of the soil, procuring trees in autumn, heeling in and planting in spring, careful cultivation and a wise selection of varieties, were the means proposed to insure success.

A spirited and discursive discussion followed, but mainly upon the question of the ability of the fruit buds of the peach to withstand low temperatures.

On Thursday evening E. W. Allis, of Adrian, entertained the audience with a series of stereopticon views, in illustration of economic entomology, accompanying them with an address upon the "Value of Training in Natural History to the Youth upon the Farm," treating of the importance of study, how, where and when to study, and of its benefits.

"Arbor Day—What Shall be Done to Increase its Popularity and Usefulness," was the next topic, the discussion of which was opened with an address by A. C. Glidden, of Paw Paw, and was followed by a general discussion, which, however, was all on one side—in favor of planting.

The Friday morning session opened with the discussion of "Injurious Insects, and How to Fight Them." The discussion took a somewhat broad range, but developed little if anything that could be called new.

"How Can we Increase the Yield of Potatoes?" was the next subject discussed, the discussion being wholly upon the propriety of cutting the seed.

"How and Why shall we Increase the Interest of Young People in Horticulture?" was the subject of a paper by Mrs. Perry Mayo, of Marshall.

E. M. Potter, of Kalamazoo, followed with a paper on "Young People and Horticulture."

Both the above were happily conceived and well written, containing many excellent illustrations of the happy influence of employment, and especially horticultural employment, upon the young. Both the papers and the subsequent discussions dwelt upon the importance of creating an early feeling of responsibility and even ownership in the minds of the young.

The Friday afternoon session opened with some account, by Secretary Garfield, of the plan adopted by the society for the organizing of local branch horticultural societies, after which the chair was occupied by President Hubbard, of the County Horticultural Society, and a paper was read by H. J. Edgell, of South Haven, on "Highways and their Improvement," in which, and in the subsequent discussion, the deficiencies of our present highway laws, and the practice under them were considered, the advantage of wide-tired wagons and various other particulars were discussed.

"Sheep Husbandry" next occupied the attention of the audience for a considerable time.

Professor Tracy followed, discussing "The Importance of Breeding Good Seeds."

The tendency of the address and of the discussion thereon was to indicate that careful selection of seed is a very important aid to improvement in both the amount and the quality of resultant crops.

On Friday evening A. D. Healy and T. T. Lyon submitted their reports as delegates to the New Orleans meeting of the Mississippi Valley Horticultural

Society. The latter had, during the excursion, collected a variety of semi-tropical fruits, leaves, branches and other specimens, which had been exhibited during the meeting.

This session of the Mississippi Valley Society, held at New Orleans just as vegetation was awaking from its short winter rest, and while the North was yet locked up in ice and snow, had been arranged upon the excursion plan. A special train had been provided at Chicago for those going over the Illinois Central Railroad, and was joined at Cairo by a party from Missouri and other western States. The excursion occurred just when the calamitous flood of the Ohio river was at its height at Cairo, and fear of danger in crossing there is said to have deterred many who had intended to go.

The change from northern zero temperature within a couple of days to that of 90° at New Orleans, with roses in bloom and a general starting of vegetation, was, to northerners, a peculiar and pleasing experience.

The three days' session of the society was largely attended, both locally and from abroad, and the papers and discussions were listened to with much apparent interest. The exhibition of fruits and numerous other articles also was highly interesting, including many things rarely, if ever, seen at northern exhibitions.

The Mobile and Ohio Railroad extended an invitation to visit Mobile free, with the privilege of being returned to New Orleans, or of going thence to Cairo direct, an alternative which was accepted by a large number of excursionists.

An extensive business had recently grown up in "truck farming" for northern markets. Large fields of cabbages and other vegetables were being grown at both New Orleans and Mobile, and shipments northward were already extensive. The light, warm soils about Mobile seemed especially adapted to this purpose, and crops could be matured and disposed of before the time to prepare for the usual summer crops. At Mobile, especially, this had already come to be very extensive and profitable.

Hon. W. K. Gibson, of Jackson, then addressed the audience on the topic, "The Home Flower Garden and its Influence."

Besides suggestions as to what and how to plant, the influence for good, and for refinement, upon the occupants of the home were dwelt upon, as well as their consequent tendency toward the restraint and diminution of crime and pauperism.

The reports of committees were next received, after which the society adjourned.

On June 13th the executive board met at the State Agricultural College, upon the invitation of the State Board of Agriculture, for its annual visit to the institution.

A. D. Healy, of South Haven, at this meeting tendered his resignation as member of the board, which was laid on the table for subsequent consideration.

The summer meeting of the State Horticultural Society was held at Ionia, in acceptance of an invitation of the Ionia County Horticultural Society.

The very wet weather of the spring and early summer still continued, inasmuch that there were but three hours of intermission during the days appointed for the meeting. This seriously interfered with the local attendance, while the visiting attendance was as large as usual.

The society was called to order by the president on the afternoon of June

26 h, 1883, and Mayor Webber appropriately welcomed the society to the city, which was responded to by the president.

Reports as to the present prospects of fruit were received from various localities, giving indications of a diminished yield, the result of injury last winter.

John Stirling, Secretary of the Belle Isle Park Commission, of Detroit, gave a brief description of the plans for the development of the park, which includes the entire island, lying in Detroit river, just above the city, with which it is to be connected by a bridge across the American channel. The planting is to be done under the direction of Professor W. W. Tracy.

Mr. D. H. English read a short paper respecting "Difficulties in the Way of Roadside Planting." Among these were mentioned the slower drying of heavy soils, that trees are in the way of travel, that this is not the purpose for which the lands were taken, stock running at large, it is time and money foolishly spent; but the most serious difficulty is a lack of interest or enterprise in this direction.

The evening session opened with an address by Rev. Charles Fluhrer, of Grand Rapids, entitled, "Glimpses of Gardens in Foreign Lands." These were mainly references to gardens about the two metropolitan cities of London and Paris. The descriptions given are highly interesting and instructive.

Next came a paper by Mrs. Chas. W. Garfield which, in her absence, was read by her husband, entitled, "Lights and Shadows in my Flower Garden," consisting of what things to do in the flower garden and when and how to do them. In the essay and subsequent discussion the beneficial effect of transplanting and of removing spent blossoms were also considered.

The session of Wednesday morning commenced with the introduction of a well preserved barrel of apples by H. C. Cain, of Cleveland, Ohio, and a description of the building and the process by which they had been preserved. Numerous questions were asked and answered and the matter underwent a short discussion, after which a paper was read by A. D. Healy, of South Haven, entitled, "Observation the Key to Horticultural Success," in which, while maintaining the value and importance of the habit of close observations, close hits were made at some of the fashionable follies of the day.

Professor James Satterlee, of Lansing, addressed the audience on the subject of "Protecting Innocent Purchasers of Plants and Trees." The first protection proposed was to educate the buyer to know what is best, and, second, by showing where his need can be supplied, by inducing him to avoid irresponsible "agents," and to deal directly with the nurseryman, and last, though not least, by joining a horticultural society.

The next topic was "Battles with the Bugs."

C. M. Weed, of Lansing, opened the subject with a paper upon "Insects Injurious to the Strawberry," in which were given the description and natural history of the May beetle, the Goldsmith beetle, the strawberry root worm, the strawberry crown borer and the strawberry leaf roller, together with the most approved remedies for each.

Mr. Badcock, of the Agricultural College, followed in continuation of the general subject with an essay on "Pyrethrum," giving some account of the plant, the manufacture of the powder, and the places where it may be obtained.

Kerosene emulsion was also commended as an insecticide by Professor A. J. Cook.

The afternoon session opened with a resumption of the discussion on insects and insecticides.

"Economy of Mulching" came next under discussion.

E. H. Scott's favorite mulch was loose, friable soil, made such by cultivation. No champion appeared for mulching proper, and the subject was passed.

"Method in Planting Small Places" was the subject of a paper from Ossian C. Simonds, superintendent of Graceland cemetery, Chicago, Illinois, which was followed by Professor W. J. Beal, of Lansing, with some remarks on "Ornamenting Small Places."

Professor W. W. Tracy continued the same general subject with an address on "Landscape Gardening for Town and Village Lots," illustrating several of the points by diagrams, etc.

The final session, on Wednesday evening, owing to the continued rain, was but thinly attended.

A poem was prepared for the occasion by Mrs. M. P. A. Crozier; subject, "House Plants."

The secretary then read a short essay prepared for this meeting by J. N. Stearns, of Kalamazoo, who was unable to be present, entitled, "Adaptation of Varieties to Soil," in which he gave his experiences and conclusions as to the soils best adapted to the various classes of fruits.

The committee on fruits exhibited reported an exceedingly creditable display of strawberries, with several plates of cherries, also peaches upon the branch, a plate of Baldwin apples, the growth of 1882, by N. E. Smith, of Ionia, and nine varieties of apples and a plate of Catawba grapes, the growth of 1882, by H. C. Cain, of Cleveland, Ohio, preserved in his patent refrigerator.

The committee on flowers and plants paid a high compliment to the exhibit.

The closing address of the evening was given by Hon. W. K. Gibson, of Jackson, on "The Country of the Amazon," giving some account of its climate, soils, and peoples, but dwelling mainly upon the wonderful variety of its flowers, fruits, and forest growths.

Upon the close of this address the audience were treated to some excellent music, after which complimentary resolutions were reported and adopted, and the meeting adjourned.

On September 12th to 14th, 1883, the American Pomological Society held its biennial session at Philadelphia, with Dr. W. J. Beal, C. W. Garfield and T. T. Lyon present as delegates from Michigan.

The attendance was large, and the exhibit of fruits by the American Pomological Society, and of both fruits and flowers by the Pennsylvania Horticultural Society, were exceedingly large and excellent.

During the meeting T. T. Lyon, of Michigan, chairman of the committee appointed at the last meeting of the society to prepare a system of rules for naming and exhibiting fruits, reported the following:

SECTION I.

Naming and Describing New Fruits.

RULE 1. The originator or introducer (in the order named) has the prior right to bestow a name upon a new or unnamed fruit.

RULE 2. The society reserves the right in case of long, inappropriate, or otherwise

objectionable names, to shorten, modify, or wholly change the same, when they shall occur in its discussions or reports; and also to recommend such changes for general adoption.

RULE 3. The names of fruits should, preferably, express, as far as practicable by a single word, the characteristics of the variety, the name of the originator, or the place of its origin. Under no ordinary circumstances should more than a single word be employed.

RULE 4. Should the question of priority arise between different names for the same variety of fruit, other circumstances being equal, the name first publicly bestowed will be given preference.

RULE 5. To entitle a new fruit to the award or commendation of the society it must possess (at least for the locality for which it is recommended) some valuable or desirable quality, or combination of qualities, in a higher degree than any previously known variety of its class and season.

RULE 6. A variety of fruit having been once exhibited, examined and reported upon as a new fruit, by a committee of the society, will not, thereafter, be recognized as such so far as subsequent reports are concerned.

SECTION II.

Competitive Exhibits of Fruits.

RULE 1. A plate of fruit must contain six specimens, no more, no less, except in the case of single varieties, not included in collections.

RULE 2. To insure examination by the proper committees all fruits must be correctly and distinctly labeled and placed upon the tables during the first day of the exhibition.

RULE 3. The duplication of varieties in a collection will not be permitted.

RULE 4. In all cases of fruits intended to be examined and reported by committees, the name of the exhibitor, together with a complete list of the varieties exhibited by him, must be delivered to the secretary of the society on or before the first day of the exhibition.

RULE 5. The exhibitor will receive from the secretary an entry card, which must be placed with the exhibit, when arranged for exhibition, for the guidance of committees.

RULE 6. All articles placed upon the tables for exhibition must remain in charge of the society till the close of the exhibition, to be removed sooner only upon express permission of the person or persons in charge.

RULE 7. Fruits or other articles intended for testing, or to be given away to visitors, spectators, or others, will be assigned a separate hall, room or tent, in which they may be dispensed at the pleasure of the exhibitor, who will not, however, be permitted to sell and deliver articles therein, nor to call attention to them in a boisterous or disorderly manner.

SECTION III.

Committee on Nomenclature.

RULE 1.—It shall be the duty of the president, at the first session of the society, on the first day of an exhibition of fruits, to appoint a committee of five expert pomolo-

gists, whose duty it shall be to supervise the nomenclature of the fruits on exhibition, and in case of error to correct the same.

RULE 2. In making the necessary corrections they shall, for the convenience of examining and awarding committees, do the same at as early a period as practicable; and, in making such corrections, they shall use cards readily distinguishable from those used as labels by exhibitors, appending a mark of doubtfulness in case of uncertainty.

SECTION IV.

RULE 1. In estimating the comparative values of collections of fruits committees are instructed to base such estimates strictly upon the varieties in such collections which shall have been correctly named by the exhibitor prior to action thereon by the committee on nomenclature.

RULE 2. In instituting such comparison of values committees are instructed to consider: 1st. The values of the varieties for the purpose to which they may be adapted; 2d. The color, size and evenness of the specimens; 3d. Their freedom from the marks of insects and other blemishes; 4th. The apparent carefulness in handling and the taste displayed in the arrangement of the exhibit.

Advance copies of these rules had been sent to P. Barry, R. Manning, and also to President Wilder, inviting criticism with the purpose to render the rules as perfect and as generally satisfactory as possible. President Wilder, in his annual address, says: "This I have examined carefully, and I desire to say that it meets my entire approval, and I tender my sincere thanks to the Hon. Mr. Lyon, its chairman, and his associates, for the able and judicious manner in which they have discharged their duty."

Pending the adoption of the report of the committee W. C. Barry read a code of rules adopted by the society at an early date in its history but which had fallen into disuse. These, together with the report, were referred to a special committee, who, upon examination, finding that the rules now proposed covered all embraced in the former, and something in addition, they recommended the substitution of those now reported, which was accordingly done.

A committee consisting of W. C. Barry, of New York, C. W. Garfield, of Michigan, and W. H. Spooner, of Massachusetts, appointed to designate the place for the next meeting of the society. The committee reported in favor of accepting the invitation of the Indiana Horticultural Society. The question of adopting the report of the committee being under consideration, it was proposed to accept the standing invitation of the Michigan Horticultural Society instead, and in the course of the discussion the Michigan delegates were invited to express their wishes, which they did, disclaiming any desire to discourage the acceptance of the invitation of Indiana; but giving assurance that if Michigan were chosen its people could be relied on to fully meet the requirements and expectations of the society. After some discussion Michigan was fixed upon as the next place of meeting.

Detroit being the commercial metropolis, was naturally first thought of as the place of meeting, but, at the request of the Michigan delegation, this was left to be determined by the State Society.

C. W. Garfield having been appointed member of the general fruit committee for Michigan, made a full and valuable report for this State which was highly complimented by P. Barry, the chairman of the committee.

The meeting of the American Pomological Society closed on Friday, and, as the Michigan State fair was to commence on the following Monday, it was necessary that Messrs. Garfield and Lyon should return to Detroit without delay, which they did, reaching that city early on Sunday morning.

The annual exhibition of the State Horticultural Society for the year 1883 occurred at Detroit in connection with the fair of the State Agricultural Society on September 17th to 21st.

Although the indications of early spring promised a fine crop of fruit the remainder of the season had been exceedingly unfavorable, so much so that the early estimates, placing the fruit crop as high as eighty per cent, had dropped to fifteen or twenty-five per cent, and very many anticipated the failure of the annual horticultural display in consequence.

The secretary in reporting the exhibition says: "Up to September 1st there were five entries of county and society collections. At the opening of the fair letters came from two of these saying that in going about to secure the fruit to fill the entry it was not to be found; the other entries not having been heard from, it was problematical whether we should have anything or not."

"The gentlemen of the Horticultural Society were really very much discouraged on Monday afternoon and Tuesday morning. After making a great effort to secure an exhibit, and getting promises from a large number that nothing should deter them from coming, it seemed as if we were going to be defeated by a dearth of material."

"Tuesday afternoon the fruit began to come in, however, in considerable abundance, and to the astonishment of everybody, by Wednesday morning, at 9 o'clock, every available space in the hall was filled. The arrangement was admirable. The flowers, fruits, plants, designs, and canned goods were so placed as to give variety to every part of the hall. The transformation was wonderful and most gratifying to all concerned; everybody felt like saying, 'All honor to the horticulturists of Michigan,' who never make a poor show."

After noticing the general exhibit, a correspondent of the Country Gentleman says: "There was one exhibit which attracted general attention, possibly from the novelty of the label attached to it. This was a large bouquet of annuals, grown in the yard of a district school, under the direction of Miss M. A. Nye, of Avon, Oakland county. Her example is commended to teachers everywhere."

A very flattering notice of this exhibit also appeared in the Rural New Yorker.

One of the most valuable educational exhibits consisted of four cases of beneficial and injurious insects, mounted, labeled and exhibited by Clarence M. Weed, of Lansing, who was in attendance to give information respecting them when desired.

The State Horticultural Society's annual meeting convened at Eaton Rapids, upon the invitation of the Eaton County Horticultural Society, on December 3d to 5th, 1883.

After a welcoming address by Mr. J. H. Corbin, of Eaton Rapids, and a response by the president, reports were received from local societies, after which a discussion was had on the question, "What Shall We Do with Our Old Orchards?" led by Wm. P. Green, president of the Eaton County Society.

On Tuesday morning a half hour was given to the answering of questions from the question box.

The annual address of the president was then delivered.

This was followed by notices of the decease of several members of the society and other prominent horticulturists, among which were Mrs. George Parmelee, Jas. Vick, S. O. Knapp, Edward Bradfield, Charles Arnold, John A. Warder, S. B. Peck and others.

The subject of a meeting of the horticultural societies of Ohio, Indiana and Michigan was discussed and referred to the executive board.

"Eaton County Horticulture" was the subject of an address by M. H. Bailey, of the Eaton county society, in which the condition of fruit culture in each township was separately considered, at considerable length.

The session closed with a discussion of the question, "What Can an Experiment Station do for Horticulture?" The question was quite fully discussed, but no action occurred on the subject.

The Tuesday afternoon session opened with a discussion of "The Nurseryman's Duty to his Patrons," which was discussed very fully, but with no expression respecting the conclusions of the society.

Professor A. J. Cook followed with an address on "New Insect Ravages in Michigan," which was followed by a discussion of remedies.

Clarence M. Weed next discussed "Injurious and Beneficial Mites," followed also by a discussion of the remedies therefor.

The session closed with a paper by C. T. Rosenkrans, entitled "Success in the Apple Orchard," with a short discussion following.

At the commencement of the Tuesday evening session another half hour was devoted to answering questions from the question box.

Professor R. C. Kedzie, of the Agricultural College, then gave a lecture on "Manures in Horticulture." The lecture was of considerable length, and was replete with practical facts and valuable information. At its close the lecturer was kept upon the stand for a long time replying to an avalanche of questions.

The Wednesday morning session opened with a resort to the question box.

C. W. Idell next discoursed of "Methods in Marketing Fruits," treating the various branches of the subject severally and adding notices of a few popular varieties.

W. A. Brown read a paper on "Horticultural Contrivances," which was followed by a discussion, mainly upon the relative merits of hand and horse lawn mowers.

A short discussion followed on "The Best Use of Surplus Fruit," during which drying and canning were considered; also the danger of lead poisoning from the use of tin cans.

The Wednesday afternoon session opened with the secretary's annual statement, giving an epitome of the more important operations of the year. The treasurer's report was then submitted, followed by that of the librarian.

A verbal report was submitted by W. W. Tracy, chairman of the standing committee on the vegetable garden.

T. T. Lyon, chairman of the standing committee on new fruits, then submitted his report for the year.

This was followed by the report of the committee on revision of the State catalogue of fruits, which had been delayed to await the action of the revisers of the fruit catalogue of the American Pomological Society, under the recently adopted rules of pomology of that society.

The following persons were elected officers for the year 1884:—

President—T. T. Lyon, South Haven.

Secretary—Charles W. Garfield, Grand Rapids.

Treasurer—S. M. Pearsall, Grand Rapids.

Members of Executive Board—(to fill vacancy) E. F. Guild, East Saginaw; (full term) W. K. Gibson, Jackson; H. W. Davis, Lapeer.

A life membership was voted to A. A. Crozier for efficient services as reporter of the society's proceedings.

The requisite notice having been given at the society's last meeting, the constitution was amended to provide for the election, by the executive board, of a first vice president.

The question of deciding upon the place for the meeting of the American Pomological Society, in 1885, was discussed and referred to the executive board.

J. N. Stearns opened the discussion upon the subject of "Celery Growing and Culture of Asparagus," and the cultivation of celery at Kalamazoo, Ypsilanti and other points was fully discussed, together with the peculiar soils best suited to this crop.

"Strawberries"—varieties and mulching—were discussed for a few minutes at the close of the session.

On Wednesday evening,

The committee on fruits reported a very creditable display of fruits from the Eaton county society.

The committee on flowers speak highly of a large bouquet of flowers from Fanny and Myrtle Healy, of South Haven, little girls of five and eight years; also a bouquet of dried grasses.

The committee on implements commend the tree-digger shown by L. G. Bragg & Co.; also a reversible barrow cultivator, an apple parer, and the label holder designed by Secretary Garfield.

The closing session, on Wednesday evening, was devoted to a social gathering, with sentiments and responses from various persons, affording a very enjoyable occasion, enlivened by occasional music.

Besides the delegates from Michigan branch societies there were present President Wm. Saunders, of the Ontario Fruit Growers' Association; J. S. Woodward, E. Ashley Smith, A. J. Rice, S. D. Willard and Charles A. Green, of the Western New York Horticultural Society; and H. P. Hanford, of Bristol, Indiana.

After the report of the committee on resolutions, the following supplementary resolution was submitted by E. H. Scott, of Ann Arbor:—

Resolved, That as officers and members of the State Horticultural Society and citizens of Eaton county, we appreciate the courtesy extended to our society by the delegates from New York, Ontario and Indiana in attending our convention, and participating so ably in our discussions, and we cordially invite them to come again.

The report of the committee, together with this addition, was adopted by a rising vote, and thereupon the society adjourned.

During the year 1883 Secretary Garfield prepared a "Primer of Horticulture" as a leading feature of the transactions of that year, consisting of plain, simple directions by experienced and successful cultivators, for the planting, cultivation and management of apples, peaches, pears, plums, grapes, quinces, currants and gooseberries, raspberries and blackberries, strawberries, vegetables, nut bearing trees, the flower garden, the conservatory, ornamental

planting, method and value of observations to the beginner. This occupied fifty-two pages of the volume for that year, constituting a complete system of concise directions for the use of beginners in nearly all branches of horticulture.

During the autumn of 1883 the State Catalogue of Fruits underwent its third revision, and was republished in the volume for that year with the needful modifications of the nomenclature to harmonize it with the newly established "Rules of Pomology," which changes rendered necessary an almost entire re-arrangement of lists to restore the alphabetical arrangement. The catalogue occupied fifty-two pages at the close of the volume.

The State Horticultural Society convened at Lapeer for its winter meeting on February 26th and 27th, 1884, upon the invitation of the Lapeer County Horticultural Society.

The society was welcomed in an appropriate address by Mr. Frank Millis, which was followed by a response from the president.

Wm. B. Hamilton, M. D., read the first paper of the evening, in which he discussed the question: "What Vegetables to Grow, in What Quantities for a Family of Six." He held that the garden, in some sense, indicates the character of its owner. For such a family, its extent should be half an acre—thirteen rods long by six rods wide. It should afford an ample supply for the family with something for the neighbors, and should be used as an arena for healthful exercise with the hoe and rake.

During the discussion that followed in reply to a question by T. T. Lyon, W. W. Tracy, of Detroit stated that self-blanching celery is not an entire novelty, it having been grown in France for many years. It is a sport from the ordinary sorts, having white stems and leaves. It is beautiful in appearance, of fair quality, though lacking the full flavor of other sorts. This flavor can only be fully developed through the influence of chlorophyll, the green coloring matter in the plant. Blanching celery improves not only the appearance, but, to some extent, the flavor, and makes it crisp and tender. Even this variety may, therefore, be improved by being earthed up.

Rev. Jas. Venning, of Lapeer, addressed the meeting on "The Ornamentation of Grounds." The subject was treated from the landscape gardening standpoint, and was followed by the secretary and others with illustrations of methods applicable to the case of ordinary farm residences.

The secretary then read a paper from Mrs. H. M. Lewis, of Madison, Wisconsin (since deceased), entitled, "The Flower Mission," describing the processes and doings of a class of societies organized to send gifts of cut flowers, pot plants, fruits, etc., to the asylums, hospitals and other places where they will be most beneficial.

On Wednesday morning the first topic was, "Shall we Raise our own Sweetening?" on which a paper was read by A. S. Partridge, of Flint, urging the growing of amber cane as the means of producing genuine sucrose and avoiding adulteration.

"How to Protect our Orchards and Gardens from Sneak Thieves," was discussed by W. B. Williams, of Lapeer, his position being that such protection is best secured by efficient enforcement of the laws. Other plans were also discussed, but no opinion was expressed by the meeting.

John T. Rich followed with the discussion of the subject of "Fruit Growing as a Part of Mixed Husbandry," the discussion of which consumed the remainder of the forenoon session.

At the opening of the afternoon session, W. K. Gibson, having been previously appointed first vice president, in pursuance of the recent amendment of the constitution, was called to the chair, which he occupied till the final adjournment.

The first topic of the afternoon was opened by T. T. Lyon, who read a paper upon the question, "What Shall We do with so Many New Varieties?" in which he suggested that the mass of our people should let them severely alone till their characteristics have been properly determined under the hands of experienced cultivators. He also urged that by some means the hasty, if not dishonest, putting forth of unworthy novelties should be discouraged and, if possible, prevented.

As a means of securing an expression of the views of the society on the question, he closed by offering the following:

Resolved, That as members of the Michigan State Horticultural Society we will, in all ordinary cases, require the approval and indorsement of a horticulturist of known reputation, not personally interested in the article, as a condition precedent to our patronage of any and all untested novelties that may be put upon the market.

After a short discussion the resolution was unanimously adopted.

"Seed Breeding" was discussed by W. W. Tracy, of Detroit, who illustrated his subject by charts and blackboard drawings, and urged the application to seed growing of processes of selection akin to those employed by the growers of animals.

John Abbott, of Lapeer, then read a paper on the "Growth and Care of Orchards," which was followed by discussion, mainly upon the spraying of orchards, and the proper material and apparatus for the purpose. Kerosene emulsion and the Field force pump were specially commended for such purpose.

The evening session was opened with an interesting report from the committee on exhibits.

R. S. Taylor, of Lapeer, then read a paper on "Utilizing the Waste upon the Farm," following which, a discussion was had upon "Exhibits of Horticultural Products," led by Professor James Satterlee, including the efforts of the society to secure increased attention on the part of exhibitors at fairs, to the tasteful display and ornamentation of exhibits.

"Masculine and Feminine in Horticulture" was the subject of an extemporaneous address by W. K. Gibson, of Jackson.

A paper upon the same subject was then read from B. Gott, of Arkona, Ontario.

"Simple Ways of having Flowers in Winter" was the subject of a paper read by Mrs. Alice R. Garfield, at the close of which the reader was made the recipient of a beautiful basket of flowers from the Lapeer city greenhouses.

Following this came the report of the committee on resolutions, which was adopted by a rising vote, whereupon the society adjourned.

At a session of the executive board, held during the meeting of the society at Lapeer, the secretary spoke of the maintaining of a monthly magazine by the "Ontario Fruit Growers' Association," and of the important advantages it afforded in the way of increase of memberships; and invited a consideration of the practicability of undertaking a similar enterprise by this society.

The board also considered the matter of attempting to make an exhibit of Michigan horticultural products at the New Orleans Exposition, but concluded to await the action of the State commission.

A statement of the desires of the Ohio and Indiana Societies to hold, jointly, with this society, a tri-State meeting was made by the secretary, and thereupon he was authorized to promote such purpose and to conclude arrangements for carrying the purpose into effect.

In consideration of the increased and increasing amount of labor devolving upon the secretary his salary was, by resolution of the board, increased to \$800 per annum.

The society having amended its constitution to provide for the election of a member of the executive board as first vice-president, the board elected W. K. Gibson, of Jackson, to that position. By the terms of this amendment the presidents of auxiliary societies are, ex-officio, vice-presidents of the parent society.

The summer meeting of the State Horticultural Society, for 1884, convened at Bay City, on June 19th and 20th, in acceptance of the invitation of the Bay County Horticultural Society.

The society was called to order by the president at 2:30 P. M.

Letters were read by the secretary expressing the desire to realize the proposal for a tri-State meeting of the Ohio, Indiana and Michigan State Societies.

A letter was also read from Professor Manly Miles, then of Massachusetts, but formerly of the Michigan State Agricultural College, stating that he was coming to Michigan soon with a new and very powerful microscope, with the purpose to thoroughly investigate the "yellows," and requesting the coöperation of the society.

A letter was also read, asking that Michigan horticulturists make an exhibition of fruits at the New Orleans Exposition.

Time was given to hear reports respecting fruit prospects, and a discussion of the currant worm and the modes of destroying it.

The first paper was read by J. N. Stearns, of Kalamazoo, on "Practical Hints on Strawberry Culture."

The paper, as well as the subsequent discussion, proceeded upon the basis of matted row culture, and subsequently drifted into the varieties and mode of treatment of other small fruits.

T. T. Lyon followed upon the topic of "Science and the Improvement of the Strawberry," discussing the status of the so-called fruit when scientifically considered, as well as the principles that should direct in the choice of varieties for cross fertilization. Objection was made to the employment of pistillates as female parents, since the modern rapid production of this recently unknown class strongly indicates a tendency to propagate its peculiar defect.

A short discussion followed, mainly respecting varieties, whereupon the society took a recess till the evening.

At the opening of the evening session the State society was welcomed to Bay City by Mayor Weadock, which was responded to by the president of the society with a short review of the history of progress in the State at large, and in the Saginaw valley and Bay City in particular.

The first paper of the evening was read by John Irving, a Bay City florist, on "Rose Culture," in which the several classes of roses were spoken of and places assigned them. A list of varieties was given, with descriptions. These were followed by directions for planting, culture and protection.

After a short discussion and the announcement of the needful committees a paper was read by Clarence M. Weed, of Lansing, on "The Food of Young

Birds," which was followed by a spirited discussion on the injurious and beneficial habits of birds.

"Horticulture for City People," by Mrs. C. Faxon, was the title of the last paper of the evening, replete with suggestions bearing upon the subject, sandwiched with humor and irony.

The morning session on the 20th opened with a paper by Professor Jas. Satterlee on "Neatness in Gathering and Marketing Fruit," following which was a full discussion of the subject from the standpoint of both the seller and the buyer.

Judge Wheeler, of Bay City, followed with a paper on "Early Attempts at Fruit Growing in the Saginaw Valley," some account of which will be found in the history of Huron and Bay counties.

General B. F. Partridge, of Bay City, gave a paper on "Fruits that Succeeded in Bay County."

The secretary then read a paper written by J. S. Woodward, of New York, on "The Use and Abuse of Water in Horticulture."

This paper elicited remarks by T. L. Brown, Professor Beal and W. W. Tracy in discussion of the subject, after which a recess was taken till the afternoon.

The first topic of the afternoon was "Sweet Corn, Growth, Varieties, etc.," upon which the discussion was opened by an address from Professor Tracy, of Detroit.

H. W. Davis followed, giving his experience in "Growing and Drying Sweet Corn," and describing a slicer used to slice the kernels from the cob. These remarks were followed by numerous questions respecting the details of evaporating.

A paper was read by A. A. Crozier, of Ann Arbor, on "The Potato Family," describing its botanical relations and giving something of their histories.

He was followed by Professor Cook, who gave a practical talk on a "New Insect Pest in Michigan, The Black Army Worm."

At the close of the afternoon session Rev. Dr. Wight, of Bay City, was called out and addressed the audience on "Methods of Utilizing Fruits in the Home." At the close of these remarks a recess was taken till the evening.

The evening session was opened by a paper by Dr. Horace Tupper on "The Influence of Flowers upon the Home," treating especially of their beautifying and elevating influences.

"The Relation of the Household to the Garden" was the subject of a paper by Mrs. R. F. Johnston.

After picturing the garden of the farmer as it is, and as it ought to be, and the ambitions of the retired business man in this direction, together with that of "the elderly man who begins to find that he wants the short rows in the harvest field, and a sober-minded horse on Sundays; who feels that though he here sees a declining sun from life's west windows, he yet lived to some purpose; and his farm triumphs of the past he renews in Brabdnagian beets and melons."

Professor Beal followed with the remark that: "These nice gardens are rare things to see, and probably always will be. Most people will go without rather than take the trouble to secure them. There are so many enemies and so many things to think of in gardening that most people will prefer to raise a few special crops and buy their vegetables."

A number present protested, saying that if farmers do not raise their vegetables they will do without.

Professor Beal followed the foregoing discussion with a talk on "Science and Strawberry Culture," giving an account of the scientific principles involved in the choice of the parents and the cross-fertilization of varieties, as well as objecting to the very common practice of employing a pistillate as the mother for such purpose.

T. F. Shepard read an interesting paper entitled, "Hooking Fruit," of the nature of which the records of the meeting afford no clue.

This was followed by the report of the committee on fruits exhibited, of which there was a large variety, including also a nice display of cut flowers contributed by several persons, together with several exhibits of fruit packages and fruit handling conveniences.

A series of complimentary resolutions was then reported and adopted, after which the society adjourned.

At a session of the executive board during the meeting at Bay City, on motion of H. W. Davis:

Resolved, That while we encourage the exhibition of all meritorious devices for the cultivation, sale and preservation of all horticultural products, we will not permit discussion upon them in open sessions of the society, or their recognition except in committee reports, unless by unanimous consent of the meeting.

Resolved further, That the discussion of varieties, plants of which are not freely offered for sale to the public, is not permissible in our meetings.

Resolved, That we welcome the American Pomological Society in the year 1885 at Grand Rapids, and that Professor Beal, the secretary, be so notified.

The annual exhibition of the State Horticultural Society for the year 1884 occurred at Kalamazoo, on September 16th to 20th, in connection with the annual fair of the State Agricultural Society. The arrangement between the two societies was substantially the same as in former years.

The holding of the State fair at Kalamazoo necessitated the construction of a building expressly for the horticultural exhibit, which was done in accordance with a plan submitted by the board of that society. The size of the hall was forty by one hundred feet, with a five feet wide flat table through the center, and a six feet wide sloping table against the wall on each side.

A display of insects, both injurious and beneficial, with an expert at hand to give information respecting them, was a new feature of the exhibit.

The number of entries of fruits and plants was eleven hundred, which included the largest list of entries of society collections ever recorded in this department at a Michigan fair. The list included entries from eighteen counties in Michigan and several from Ohio and Indiana.

The secretary concludes his record of the exhibition with the following:

Among the lessons of the fair were—

1. Tables are infinitely superior to shelving upon which to show fruits.
2. A clasp in which to hold the name card well above the fruit is a great help to observers.
3. Either the fairs should be held longer, so that people will not come in so large numbers upon a single day, or accommodations for a large crowd to see and study the displays without hindering others should be given.
4. Exhibitors of collections should have their fruit so packed and lists so made out that their exhibits can be put in shape in at least half a day after reaching the ground.

5. Every possible convenience should be given committees for rapid and systematic work, and the securing of a tasty exhibit, with these conveniences, is a problem well worth the study of fair managers.

6. Exhibitors should have made such a study of the premium list as to know exactly their places of entry and procedure before they reach the ground.

7. All unworthy varieties should be rejected unless they are shown for the purpose of educating people as to what they do not want, which fact should be made conspicuous to observers and committees.

8. Committees cannot afford to make awards without placing upon record the argument which led to their decision, the same to be printed with the list of awards.

9. A place in the hall should be devoted to those seeking names of fruits, where all such can be placed under proper supervision, and the committee on nomenclature give the desired information on cards made for this especial purpose.

10. More attention should be given to the securing of exhibits by amateur growers of plants and flowers.

At sessions of the executive board held at Kalamazoo during the continuance of the State fair at that place, the society's rules were so amended as to prohibit the sale and delivery of articles in the hall during the fair, on penalty of the forfeiture of all premiums.

T. T. Lyon was nominated to the Michigan Commission in charge of the proposed State exhibit at the New Orleans Exposition, as a suitable person to have charge of the horticultural department of such exhibit.

The contemplated tri-State meeting of horticultural societies having been abandoned, Ann Arbor was fixed upon as the place for the next annual meeting.

In a "Brief of Michigan Horticulture," compiled by Secretary Garfield, and published in the transactions of the society for 1884, he states: "From quite accurate data, I have estimated the sales of apples from Michigan the past season at five million bushels, at prices ranging from one to two dollars per barrel. The area in fruit cannot be less than three hundred thousand acres, and the planting, especially in peaches and small fruits, is rapidly increasing this area."

On the second day of October, 1884, T. T. Lyon engaged with Commissioner G. Chase Godwin to make the effort to collect fruits for a State exhibit at the New Orleans Exposition, although conscious that the most favorable time to do so was already past; but the instruction being to await the receipt of railroad passes for the purpose, the work was not actually commenced until the tenth of that month.

The plan proposed was to secure the collection through the auxiliary societies and individuals who might be interested in the matter, allowing the fruit to be entered in the name of the exhibitor, if desired, while the whole appeared as the exhibit of the State, although not entered for premium as such.

All fruits were directed to be forwarded to Grand Rapids, as a convenient point from which to forward them to their final destination.

It was soon discovered that the failure to provide for the selection of specimens at the time of gathering would greatly interfere with the character of the collections to be made, since the crop was nearly all gathered, and few persons would consent to overhaul their fruit already in barrels or cellars for the purpose of making selections.

The fifteenth annual meeting of the State Horticultural Society convened at

Ann Arbor, on the 1st to 3d of December, 1884, with a large attendance, including delegations from fourteen auxiliary societies. President William Saunders and Secretary D. W. Beadle were present as representatives of the Ontario Fruit Growers' Association; W. C. Barry, of the Western New York Horticultural Society; and L. B. Pierce, of the Ohio Horticultural Society.

The society was called to order for an evening session on Monday. The exercises were preceded by prayer and some excellent music, after which a very happily conceived welcome was pronounced by Dr. Henry S. Frieze, of the University, and briefly responded to by the president, to which he appended a short valedictory address, in which mention was made of prominent matters to be considered by the society, among which were the arrangements needful to appropriately receive and accommodate the American Pomological Society at its approaching meeting at Grand Rapids.

In pursuance of previous direction of the Society he named Byron G. Stout, of Pontiac; Henry G. Reynolds, Grand Rapids; A. J. Webber, Ionia; Wm. K. Gibson, Jackson; Wm. L. Webber, East Saginaw; J. G. Ramsdell, Traverse City, as a committee to have in charge the preliminary arrangements, and the welcoming of the American Pomological Society to Michigan.

Professor J. B. Steere, of Ann Arbor, gave the lecture of the evening on the "Origin of Horticulture," tracing its development jointly with that of the human race from primeval ages downward.

After the close of the lecture President William Saunders, of Ontario, exhibited a head of wheat apparently degenerating to chaff, which he had been requested to bring to the meeting for investigation. Also the branch of a Wagener apple tree, bearing one fruit of the usual color and another considerably russeted. The specimens were referred, for examination, to a committee consisting of Professor V. M. Spalding, Professor J. B. Steere, and A. C. Glidden.

The question—"What shall we do with the English sparrow?" was replied to by L. D. Watkins, of Manchester, who, three years previously, had investigated the subject, at the request of the Department of Agriculture. In England, the sparrow had increased in numbers wonderfully in recent times, and has become a serious pest to small fruits. Cherry trees have had to be covered with netting to protect the fruit. Oat and barley fields have become so infested with them that small boys had to be stationed to keep them off. License has been given to shoot them and rewards offered. They originated on the continent and have not been numerous in England until recently. They do not spread through the country rapidly, and, in some parts of Scotland, I believe, are still unknown. They do not injure wheat much, sometimes crushing the berry while young for its juice, and occasionally, by their weight, breaking down the stalk. They have been carried to Iceland, and seem to thrive well there.

Emil Baur had found them a serious pest about Ann Arbor, also this was the case in Germany.

Professor Steere rather liked the suggestion made at a meeting of the local society, that we eat him. We meant to have a great sparrow pot-pie for this State meeting, but the law would not allow us to kill them.

A recess was taken till the morning.

At the opening of the Tuesday morning session the delegates were invited by President Angell, to visit the University, which invitation was accepted for Wednesday morning at ten o'clock.

The earlier portion of the session was devoted to answering a variety of questions.

The committee to examine the specimens presented by President Saunders reported respecting the head of wheat and chess, that the microscope revealed the fact that there was no connection by growth, but that a hand of chess had become so entangled with a head of wheat that it had been torn loose from its own head, leaving its small pedicel confined behind a hand of the head of wheat.

The committee report, in the case of the apple, that russet spots on apples are as common on almost all varieties as freckles on the human face. Professor Spalding thought they might be due to pollenization, but, in this case, no russet tree was in the neighborhood. President Saunders thought such variations might, more naturally, be attributed to bud variation.

A short paper was read by Professor James Satterlee on "Judging Fruits at Fairs." The paper was supplemented by a somewhat full discussion, more particularly of the duties and qualifications requisite for judges.

W. W. Tracy, of Detroit, spoke at length on the subject of "Making Horticultural Displays," illustrating his remarks by large charts showing the modifying influences of position upon the appearance of articles exhibited and the best modes of constructing and lighting buildings intended for exhibition purposes.

The afternoon session was opened by the reading of correspondence from persons unable to be present, after which half an hour was devoted to answering questions.

President Wm. Saunders, of Ontario, then spoke of the "Habits of Our Friendly Insects," which he considered under two heads, those which prey upon other insects and devour them, and those which deposit their eggs on or in the skin, the eggs hatching within and preying upon the body of the insect attacked; also explaining why in some cases an injurious insect increases greatly for a time only to be followed by the corresponding increase of its parasite.

Professor A. J. Cook followed with a short paper on "Insecticides for Bark Lice," devoted to different modes of applying kerosene soap mixture and bisulphide of carbon, and to the description of a machine of his invention for the rapid application of these substances underground.

In speaking of the apple maggot (*Trypeta pomonella*, Walsh), he says: "This insect was first described by B. D. Walsh seventeen years ago in the American Journal of Horticulture. Since that time we have heard much of it as a great scourge in New York and the New England States. In the west, Michigan, Illinois, Wisconsin, it has, however, been known only as infesting our wild haw or thorn-apple. Last year I received specimens of it from Delavan, Wisconsin, with the information that it was doing great damage. This year (1884) the enemy has attacked us on our own ground. I know from personal observation that in Ingham and adjoining counties it has wrought considerable mischief, and if we may use the experience of our eastern friends as a criterion, it is safe to say that the end is not yet.

Robert L. Hewitt, of Lansing, followed with a paper on "Horticultural Statistics," in which plans were developed for securing these.

A. C. Glidden moved that the paper be accepted and its views adopted as the sense of the society.

"Grapes and Grape Rot" were discussed by D. W. Beadle, of Ontario. He

had not been troubled with grape rot but found his season too short for several of the later varieties.

The rot was discussed by several other persons quite at length.

Tuesday evening session opened with a series of questions and answers, after which some excellent music was rendered by the Amphion club.

Professor Spalding then gave the lecture of the evening on "Rusts, Smuts, Molds and Blights," which was followed by several questions by different persons.

R. T. McNaughton, of Jackson, then gave a paper replying to the question, "What can a Horticultural Society do for City Residents?"

After considering the question in various lights, he closes as follows: "Certainly it could not fail to give those who attended its meetings many pleasant hours of association with an innocent and interesting subject; nor could it fail to teach them many lessons which would broaden their ideas, bring them more in sympathy with the great class of food producers, and instruct themselves in the art of producing those beauties and utilities of nature which help to make a home more than a mere abiding place."

A letter from O. C. Simonds, of Chicago, on "Studies in the Woods," was read by the secretary, describing the peculiar beauties of some of our native wild wood plants not found in nursery catalogues. The subject was followed up by Messrs. Satterlee, Saunders, Tracy and Barry.

With the opening of the Wednesday morning session the annual statement of the librarian was received, and the secretary's statement of disbursements followed.

The treasurer's report came next, showing a balance of \$1,207.80 in his hands.

The committee on floral decorations reported very highly complimenting Mr. James Toms, florist, of Ann Arbor, for the display and arrangement of plants with which the room was ornamented.

"What are the Best Varieties for One Thousand Peach Trees to be Planted for Market? What Can be Said of Any New Varieties?" was a question submitted to the meeting, and J. N. Stearns, J. J. Atherly and S. B. Lewis were constituted a committee to prepare a reply.

After a short discussion respecting varieties of grapes, the society proceeded to the election of officers for the year 1885. The persons elected were as follows:

President—T. T. Lyon, of South Haven.

Secretary—Chas. W. Garfield, Grand Rapids.

Treasurer—S. M. Pearsall, Grand Rapids.

Members of Executive Board—E. H. Scott, Ann Arbor; C. A. Sessions, Mears.

The society now took a recess till afternoon, for the purpose of visiting the University, upon the invitation of President Angell.

At the opening of the afternoon session the committee on list of peaches for an orchard of one thousand trees for market, reported each a distinct list of varieties. These lists included fifteen varieties, as follows: Alexander, Amsden, Barnard, Early Crawford, Golden Drop, Hale, Hill's Chili, Jacques, Late Crawford, Mountain Rose, Richmond, Rivers, Smock Free, Snow's Orange and Wager.

A short discussion respecting strawberries, sweet apples, Le Conte pears and quinces was followed by a discussion of "Flowering Plants for the Lawn," led by President Saunders, of Ontario.

W. C. Barry, presented the following list of shrubs in the order of blossoming, extending through the season :

Forsythia,	Wiegela rosea,
Japan quince,	Wiegela candida,
Prunus triloba,	Deutzia, Pride of Rochester,
Spiræa prunifolia (fl. pl.),	Pœonia, herbaceous modesta,
Lilac soerulia superba,	Pœonia, herbaceous festiva,
Lilac Rothomagensis,	Spiræa billardi,
Lilac, common white,	Spiræa callosa alba,
Honeysuckle, pink flowering,	Althæa boule de feu,
Deutzia gracilis,	Hydrangea paniculata grandiflora.
Spiræa cratægifolia,	

After some time devoted to the asking and answering of questions, a paper was read by A. C. Glidden, of Paw Paw, on "Rural Periodicals and Our Duty to Them."

The underlying thought of the paper was that there should be a mutuality of responsibility for the facts and doctrines of a periodical between the editor and his subscribers, the one contributing the logic and rhetoric, and the other the basis of fact on which he may build.

"The Nurseryman and the Planter" was the next topic discussed, after the consideration of which a recess was taken till the evening.

On re-assembling at evening the exercises opened with a rare treat of music by the Chequamegon Club.

The report of the committee on fruits was then submitted, showing the exhibit to consist of two hundred entries of fruits and vegetables, also a very rare collection of Indian and other relics. The report of the committee was adopted.

The remainder of this, the closing session, was spent very enjoyably in the announcement of topics with responses thereto, by select speakers.

The report of the committee on resolutions was then offered and adopted; Whereupon the society adjourned.

At a session of the executive board held at Ann Arbor, December 3d, 1884, during the annual meeting of the society at that place, T. T. Lyon was appointed chairman of the delegation to the meeting of the Mississippi Valley Society, to be held at the New Orleans exposition.

As a session of the executive board held at Lansing on January 25th, 1885, Secretary J. W. Beal, of the American Pomological Society, and Professor Bailey, of the Agricultural College were present, and consideration was given to the necessary provisions for the meeting of the American Pomological Society, next September.

Chas. W. Garfield, H. G. Reynolds and S. L. Fuller were chosen a local committee at Grand Rapids, to look after the needful preliminaries for such meeting.

T. T. Lyon thereafter at once resumed his duties in preparation for the fruit exhibit to be made at New Orleans, and on December 6th the collection of fruits, amounting to one hundred barrels, were loaded into a railroad car and started for New Orleans, in charge of Mr. H. Fralick, who accompanied it to protect it from freezing, and also from being delayed in transit.

In obedience to a telegram from Hon. G. Chase Godwin, of the Michigan Commission, at that time in New Orleans, Mr. Lyon started for that place on

December 20th, reaching there on the 22d, finding the fruits lying at the Michigan headquarters in the Government building, exposed to a temperature often as high as 90°, the refrigeration promised not being yet prepared for their reception. Several barrels were at once removed to Horticultural Hall, and the space assigned to Michigan occupied temporarily, awaiting the time for the competing exhibits to be placed on exhibition. The arrangements for refrigeration were vexatiously delayed, and although the fruits were transferred to the cold storage room as soon as practicable, the refrigeration was not actually applied till about the 25th of January, prior to which date overhauling and assorting had twice become necessary, and the quality as well as quantity of fruits was sadly reduced.

The best disposition possible was made of the collections yet remaining when the period arrived for the examinations and awards of premiums, but owing to the sad waste of specimens the larger entries were no longer possible, the highest entry actually made consisting of no more than ten varieties of apples.

Notwithstanding these accumulated misfortunes, the display from Michigan was awarded premiums as follows:

Best collection of ten varieties of apples to Geo. Seagrove, Spring Lake, Ottawa county, silver medal and \$25.

Best collection of three varieties to W. N. Cook, Grand Rapids, Kent county, silver medal and \$15.

Best plate Bailey's Sweet to J. McDiarmid, Bear Lake, Manistee county, \$5.

Best plate Twenty Ounce to J. W. Van Deman, Benzonia, Benzie county, \$5.

Best plate Cooper's Market to J. F. Taylor, Douglas, Allegan county, \$5.

Best plate Flushing Spitzenburg to Neil Munro, Elk Rapids, Antrim county, \$5.

Best plate Mann to Neil Munro, Elk Rapids, Antrim county, \$5.

Best plate Northern Spy to Neil Munro, Elk Rapids, Antrim county, \$5.

Best plate Pomme Gris to J. F. Taylor, Douglas, Allegan county, \$5.

Best plate Red Canada to J. C. Woodruff, Hastings, Barry county, \$5.

Best plate Rhode Island Greening to S. Rice, Bear Lake, Manistee county, \$5.

Best collection plums, ten varieties or more, to D. L. Garver, Hart, Oceana county, silver medal and \$50.

Near the close of December there arose a necessity for early action by judges upon the exhibit of fruits from the Pacific Coast, which were exhibiting symptoms of decay.

Mr. Earle therefore designated the following persons as judges to award the premiums in these classes, viz: T. T. Lyon, of Michigan; E. H. Calkins, Iowa, and Professor ——— Mohr, of Alabama, who awarded the premiums on grapes, Japan persimmons and pears, while for the awards on apples in this district Professor Mohr was replaced by J. C. Plum, of Wisconsin.

On January 14th the annual meeting of the Mississippi Valley Horticultural Society was held upon the exposition grounds, and during its continuance the names of a horticultural group of twenty-five judges were announced, of whom only one, T. T. Lyon, was a resident of Michigan.

To Lyon, of Michigan, Brackett, of Iowa, and Peffer, of Wisconsin, was assigned the work of correcting the nomenclature, a task utterly beyond the ability of any single committee within limited period prior to the action of awarding committees.

Mr. Lyon was also appointed a member of a committee of the society to prepare resolutions respecting the death of Charles Downing, which occurred at his home at Newburgh, New York, January 19th, 1885, at the advanced age of eighty-three years.

He also attended the Agricultural Congress held at the exposition as the representative of the Michigan State Horticultural Society.

He was also made chairman of the committee charged with the determination of the awards to several large collections of fruits from England and France.

On February 18th a very large collection of citrus and other fruits arrived from Florida, among which were guavas and other fruits of a very perishable nature, the awards upon which were made by T. T. Lyon, of Michigan, and G. B. Brackett, of Iowa.

On February 23d, T. T. Lyon, H. E. Van Deman and E. H. Calkins were designated to make the awards on the trees, plants, roses and other shrubs, together with a very large display of bulbs in beds and now in flower. Having accomplished this, the same judges were asked to pass upon an immense exhibit of citrus fruits just placed upon the tables from Florida.

As Mr. Lyon's connection with the Michigan exhibit was now closed and he had arranged to leave for home, he only consented to undertake this upon condition that the work could be completed prior to the middle of March.

The task was rendered the more difficult by the circumstance that the examinations of the Florida fruit must be made before the arrival of the California collections with which they were to compete, thus rendering it necessary to value each plate and entry upon a scale of points, and make a record of each, to be compared with a similar record of the competing California entry, when examined.

Upon completing the examinations and records of the Florida exhibit, news was received that the competing display from California could not be upon the tables before nearly or quite April, and since Mr. Lyon's stay until that time would too seriously interfere with his duties at home, he was released from farther committee work and started for home on the 10th of March.

The State Legislature of 1884 and '5 had appropriated the sum of \$1,000 to be used under the direction of the Governor of the State in providing facilities for the proper reception and accommodation of the American Pomological Society, at its biennial session to occur at Grand Rapids, in September, 1885.

Evart H. Scott was appointed by the Governor to have charge of the disbursement of this fund, and after paying the accruing expenses he returned to the State treasury an unexpended balance of \$168.75.

Early in June, 1885, upon the invitation of the State Board of Agriculture, the executive board of the State Horticultural Society, the officers of the State Grange, and the executive committee of the State Agricultural Society, assembled at the Agricultural College and spent the day in looking over the various departments. After dinner the company, together with the faculty and students, were gathered in the chapel, where several persons were called on for short addresses. Among these the president of the State Horticultural Society took occasion to remark upon the value of a scientific education as the proper basis upon which to build a practical as well as a technical knowledge of horticulture. The selection of L. H. Bailey, Jr., a life member of the State Horticultural Society, as professor of horticulture at the college, was favorably commented upon by several of the gentlemen present.

The summer meeting of the State Horticultural Society for 1885 was held at Frankfort, Benzie county, upon the invitation of the Benzie County Horticultural Society, on June 24th and 25th.

This locality, being remote from the older portions of the State, and inaccessible by rail, it was not anticipated that there would be a large attendance from other sections, relying mainly upon a general attendance from the immediate vicinity. A pleasant morning ride by steamer from Manistee brought the visiting members to Frankfort in good season for an afternoon session, which was called to order by President C. F. Burroughs, of the local society, who introduced Vice President N. A. Parker, by whom the visiting society was warmly welcomed to the village of Frankfort and the county.

This was responded to by the president, with some references to his earlier acquaintance with Benzie county fruits, after which the meeting was placed in charge of the State Society, and the president called for the first paper upon the programme, the subject being "Insect Biography," by Clarence M. Weed, of Chicago, Ill.

Several of the more common and troublesome insects were traced through their transformations, and their appearance and habits described, as well as the best methods of attacking them.

G. C. McClatchie, of Ludington, having written a letter to Secretary Garfield on the "Culture of the Plum," this was read as an introduction of that subject.

The writer urged the best of soil and cultivation as necessary to success, and depended upon jarring as the most effective means of arresting the ravages of the curculio. As to varieties he preferred the Purple Egg, his second choice being Bradshaw and Lombard.

He had also found the rotting of the fruit before maturity to be quite troublesome.

The reading of the letter was followed by a short discussion, after which C. A. Sessions, of Mears, addressed the meeting on the topic of "Profitable Potato Culture," following which there arose a general discussion of the subject, continuing till the adjournment.

The evening session was opened by the announcement of committees, after which the discussion of the subject of "Timber Protection" was opened by Professor James Satterlee, of Lansing.

An earnest discussion followed, participated in by T. T. Lyon, J. J. Atherly, J. J. Hubbell, S. W. Fowler, C. W. Garfield and others, bearing mainly upon the effects of protection.

On Thursday morning the visitors were met by a number of conveyances and shown something of the horticultural improvements about Frankfort, after which the party were driven out a number of miles, part of the distance along the shores of the beautiful Crystal lake to Benzonia, where, after a pleasant drive about the town, they landed at a pleasant grove on the bank of the lake where a table, loaded with the good things of the land, was in readiness, at which all with a hearty good will essayed to do their part in relieving it of a portion of its load. The effort, however, was but partially successful for a reason that may be supposed to be indicated by the brevity of some of the after-dinner speeches, save that of the worthy treasurer who, apparently not conscious that he was "carrying coals to Newcastle," indulged in a warm lecture on "Prohibition."

The party returned to Frankfort by another route in time for an evening session, which was opened by the reading of a letter from Secretary W. J.

Beal, of the American Pomological Society, calling attention to the approaching meeting of that society in our State, and urging that a strong delegation be present to represent this locality, accompanied by a good display of its fruits. A good many questions were asked and answered respecting the matter, after which Professor L. H. Bailey, Jr., of the Agricultural College, read a paper on "Things in a New Country not Generally Appreciated," the drift of which, as well as its appropriateness to the locality and the occasion, will be readily inferred from the title.

The question, "Is the 'Leaf Curl' of the Peach a Disease?" was answered by T. T. Lyon—No. not in the sense in which disease is generally regarded. It is a disease only in the sense in which grape mildew and other fungous growths are a disease.

"What is the Best Method of Destroying the Green Aphis on the Peach?" was the next query, which elicited various suggestions, but none that had the weight of experience to sustain them. Pyrethrum, white hellebore, and soap suds were suggested as probable remedies.

J. N. Stearns, of Kalamazoo, then discoursed on "Some New, Good Things in Horticulture." The new, good things considered were a few fruits that had been long enough before the public to have pretty well established a reputation.

"Improvement of Fruits with Regard to Hardiness" was the subject of a paper from Professor J. L. Budd, of Iowa, which was read by the secretary. The summing up of the writer was: "Develop the hardiness of good sorts by continually subjecting them to less severity than they can withstand. Do not weaken them by undue exposure, but strengthen them by a proper amount."

Mr. W. H. Burr then presented the claims of a new monthly, to be called "The Michigan Horticulturist," to be edited by Secretary Garfield and published by the W. H. Burr Publishing Company, of Detroit.

The committee on exhibits were then called upon and submitted a very complimentary report, which was accepted and ordered published.

The committee on resolutions submitted a series of complimentary resolutions which were accepted and adopted.

A supplementary resolution on the recent decease of Charles H. Parker, of Joyfield, Benzie county, was submitted by J. W. Van Deman, which on motion of S. M. Pearsall was adopted by a rising vote.

A resolution of thanks to the members of the press was offered and adopted, they having constituted the committee on resolutions, and very naturally omitted all mention of their valuable aid.

The convention then adjourned.

In discussing the forestry problem Secretary Garfield quotes James S. Brisbin as saying: "At the present rate ten, or at most twenty years, will see the end of the forests of Michigan, Minnesota, and Wisconsin."

Under the head of Forest Statistics the secretary, on what he regards as the highest authority, places the present amount of lumber in Michigan at fifty billion feet.

Accepting these estimates as correct, and reckoning for twenty years, no less than two billions, five hundred millions of feet must be annually cut into lumber in Michigan—a work of destruction which is simply appalling, when considered with reference to the future of our State.

Secretary Garfield says: "Nebraska has the honor of originating Arbor

Day. Some twelve years ago, through the influence of that pioneer tree planter, Ex-Governor J. S. Morton the Governor appointed the second Wednesday in April as the day to be devoted to economic tree planting; and it is stated that twelve million trees were planted on that day. The successive Governors have continued thus to recognize this day."

"Governor Bagley, in 1876, issued a proclamation inviting people to plant, on a certain day, trees in commemoration of the centennial of American independence, and the day was very generally and successfully observed."

"The Legislature of 1881 passed a concurrent resolution asking the Governor to name a day for tree planting throughout the State of Michigan, and each year since, by proclamation, a day has been designated as Arbor Day, and the people have been urged to plant trees about their houses, on the roadside, in the school yard and upon the cemetery lot."

On September 9th to 11th, 1885, the American Pomological Society held its first biennial meeting in the State of Michigan, at Grand Rapids. The sessions were held in the audience room of the First Universalist Church, an excellent, quiet and conveniently located room for such purpose, while the exhibit of fruits was displayed in Division Street Armory, three blocks away. The display of fruits was excellent, Michigan alone showing nearly a thousand and plates, aside from individual collections, prominent among which was Professor Bailey's display of native fruits and nuts.

The welcoming committee, consisting of Hon. Byron G. Stout, of Pontiac; Hon. Henry G. Reynolds, of Grand Rapids; Hon. A. J. Webber, of Ionia; Hon. Wm. L. Webber, of East Saginaw; Judge J. G. Ramsdell, of Traverse City, and Hon. W. K. Gibson, of Jackson, had arranged with President Angell, of the State University at Ann Arbor, to welcome the society to the State.

At 10 o'clock A. M., notwithstanding the prevalence of a drizzling rain, the meeting was called to order by Secretary Beal, with a large attendance.

In doing so he announced, with much regret, the inability of the venerable president, Marshall P. Wilder, of Massachusetts, to be present, owing to his great age and feeble condition.

In the absence of the first vice president, Hon. P. J. Berckmans, of Georgia, Patrick Barry, of New York, was chosen chairman, and on taking the chair called on the Rev. Chas. Fluhrer, of Grand Rapids, who opened the meeting with prayer.

The chairman then called on President T. T. Lyon, who addressed a few words of welcome on behalf of the Michigan State Horticultural Society.

Mayor Curtiss, of Grand Rapids, was then called on, and welcomed the society to the city.

The address in behalf of the State was then delivered by President Angell.

To these welcomes Mr. Barry responded heartily and appropriately, after which the announcement of committees was made, and the credentials of delegates received.

The treasurer, Benj. G. Smith, of Cambridge, Mass., submitted his biennial statement.

Boston, Massachusetts, was agreed upon as the place for holding the next meeting, in 1887.

The officers elected for the next biennial term were:

President—Marshall P. Wilder, of Massachusetts.

First Vice-President—Patrick Barry, of New York.

Treasurer—Benjamin G. Smith, of Massachusetts.

Secretary—Charles W. Garfield, of Michigan.

The address of President Wilder was then read.

“New Fruits” then were discussed.

In this connection it seems proper to explain that remarks on new fruits are not to be taken as expressing the conclusions of the society, but merely as the opinions of the individuals who may express them. No conclusions of the society respecting varieties of fruits are given except through its catalogue.

The afternoon session was consumed in the discussion of new varieties of apples, including crabs.

The session of Wednesday evening was devoted to a lecture by Charles E. Bessey, Ph. D., of the University of Nebraska, on “Injurious Fungi in their Relation to the Diseases of Plants.”

The lecture displayed extensive research and was highly instructive and valuable in its relations to pomology, especially so in its closing remarks, modes of operation and possible remedies.

The Thursday morning session, after some preliminary business, was opened with an address on “P ar Blight” by Professor J. C. Arthur, of New York, confirming the premises and deductions of Professor T. J. Burrill, of Illinois, and apparently demonstrating the agency of bacteria in the production of the disease, and that they are or may be introduced through the young, growing shoots or through the flowers.

After the close of the lecture several questions were asked respecting pear blight and yellows of the peach; also respecting modes by which they may be communicated.

At the close of the lecture the following telegram was received from President Wilder:

To the American Pomological Society, in session at Grand Rapids:

Many thanks for the telegram of greeting and congratulation. I accept the trust you have again put in my hands. Go ahead, and may God bless the grand old Pomological Society.

MARSHALL P. WILDER

Dorchester, Mass., September 10th, 1885.

The Secretary then read a paper from Professor T. J. Burrill, of the Illinois University, on “Grape Rots,” of which he stated there are four distinct kinds, although very commonly confounded by most persons.

L. B. Pierce, of Ohio, followed, introducing the subject of “Methods of Conducting State and Local Horticultural Societies.”

Professor C. V. Riley contributed a paper on “The Mildews of the Grape Vine—An Effectual Remedy for Peronospora,” which he subsequently amended, and brought its record of facts down to a later date.

The remedy for peronospora is a European discovery: “Dissolve eight kilogrammes (.8 pounds) of ordinary sulphate of copper in one hundred litres (about 22 gallons) of any kind of water (well, rain or river); in a separate vessel mix thirty litres (about 6½ gallons) of water and fifteen kilogrammes (about 34 pounds) of coarse lime, so as to make a milk of lime. Then mix with this the solution of sulphate of copper. These will form a bluish paste. Pour a portion of the mixture into a bucket or other vessel, thoroughly shaking it, and brush the leaves with a small broom, taking care not to touch the

grapes. There is no fear of any accident, not even to the most tender portion of the vines."

Professor Riley, quoting from Wm. Saunders, of Washington, adds: "The uncinula is encouraged by a dry atmosphere and the peronospora by a moist atmosphere. His experience will show that the nature of the soil or mode of cultivation has but little influence on the fungus, and that protection from above, as by covered trellis, is about the best prevention of the peronospora; also that grape vines with downy foliage are more susceptible to the peronospora than those with smooth foliage."

The next topic was, "Lessons from the World's Exposition," the discussion of which was opened by a paper from L. A. Goodman, of Missouri, of which the secretary failed to obtain a copy, but in which he criticised the management of the exposition for shortcomings which were keenly felt by horticulturists who exhibited there.

In continuation of the same subject a paper was contributed by T. T. Lyon, of Michigan, which attributed the failure not altogether to the management, but in some degree to other causes, such as the excessively discouraging reports of newspapers and correspondents, and the shortcomings and exactions of railroads, which greatly diminished the attendance of excursionists from the north and sadly impaired the quality of exhibits, especially those of a perishable character. In the display of the indigenous products of the several States, and their manufactures as well, the exposition was highly creditable, while in no other season and climate would so extensive and grand a horticultural exhibit have been possible, notwithstanding the fact that, in very many particulars, its arrangement and management were open to the severest criticism.

"The Nomenclature of Fruits" came next under discussion, and its consideration was opened by a paper read by T. T. Lyon, of Michigan, urging the importance of a strict application of the society's rules as a means of insuring respect for them by others.

A letter from J. J. Thomas, of New York, read by the Secretary, took, substantially, the same ground.

T. T. Lyon offered the following:

Resolved, That in all cases in which new, newly-named, or recently introduced fruits shall, for the first time, come under the consideration of the Society, it shall be the duty of the presiding officer to first submit the *name* of the variety for approval, and that, if objected to, the variety shall be designated by the name of the originator, that of the introducer, or of the place of origin, as the society shall direct, pending the designation of a suitable name, as provided in rule 2, section 1, of the society's rules, and the approval of such name by the society.

The above was referred to the committee on resolutions and was, subsequently, reported favorably and adopted by the society.

Charles Gibb, of Quebec, read a paper on "The Nomenclature of Russian Apples," which closed the forenoon session.

At the opening of the afternoon session "The Influence of Pollen on the Form, Size, Color and Flavor of the Fruit" was the subject of an address by W. R. Lazenby, of Ohio, who described some experiments with the Crescent strawberry, conducted at the Ohio experiment station, and also exhibited four pears, supposed to indicate a modifying influence upon two of them from cross fertilization.

The following note from Matthew Crawford, of Ohio, was read by the secretary:

"Some months ago, at your request, I promised to write a paper on the 'Influence of Pollen on the Size, Form, Color and Flavor of Fruits.' So far as the strawberry is concerned I have had excellent facilities for making observations, and I have yet to find any good evidence that the influence of pollen extends beyond the seed."

The discussion was continued by the reading of a paper from T. J. Burrill, of Illinois, on "The Fertilization of the Strawberry," which indicated no perceptible variation from cross fertilization.

On the other hand a paper on "The Influence of Pollen," from A. S. Fuller, of New Jersey, mentioned notable cases of such modification.

Similar results had been reached by Thomas Wilde, of Michigan, and J. L. Budd, of Iowa, in the course of their experimentations.

F. M. Hexamer, of New York, read a paper from E. Williams, of New Jersey, on "Cross Fertilization of the Strawberry" in the use of the Jewell fertilized by the pollen of several varieties, used separately, with no indications of modification.

The reader closed with the remarks: "These cases are not evidence that pollen may not have a direct influence. No amount of such evidence can counteract one case of direct evidence. Formerly it was the non-scientific who retarded progress; but there is such a thing as scientific men retarding progress by refusing to recognize new truths until practical men have demonstrated them. Dr. Hexamer then referred to the well known fact that, in animals, a male will have an influence on the female which may appear in her offspring for several generations afterward."

The committee on fruits exhibited reported awards of

THE WILDER SILVER MEDAL TO

Michigan State Horticultural Society, for a general collection of fruits, consisting of 838 plates.

Ohio Horticultural Society, for collection of 114 plates.

Missouri State Horticultural Society, for collection of 211 plates.

Ellwanger & Barry, Rochester, New York, for 140 varieties pears.

Benjamin G. Smith, Cambridge, Mass., for 61 varieties pears.

Peter M. Gideon, Minnesota, for 28 varieties crab apples and apples of his own origination.

Field & Osborn, New Jersey, for collection of cocoanuts grown by them in Dade county, Florida.

W. J. Bal, Michigan, our retiring secretary, recommended in consideration of his valuable and untiring services.

THE WILDER BRONZE MEDAL TO

Henry M. Engle & Son, Pennsylvania, collection of fruits and nuts.

A. J. Caywood & Son, New York, for three new seedling grapes.

Geo. W. Campbell, Ohio, for six new seedling grapes.

W. W. Thompson, Georgia, for pears, grapes, figs, Japanese persimmons and pomegranates.

A. Black, California, for four new seedling pears.

Prof. L. H. Bailey, Jr., Michigan, for seventy-five plates native berries, nuts and other fruits.

T. V. Munson, Texas, for twelve new seedling and native Texan grapes; also plums and peaches.

HONORABLE MENTION OF

J. Nimon, Texas, for apples and peaches.

L. A. Goodman, Missouri, for collection of apples, pears and grapes kept two years in cold storage.

J. S. Orven, Michigan, for Rivers peach.

S. H. Comings, Michigan, for exhibit of cranberries.

OTHER EXHIBITS REPORTED.

J. J. Toon, Georgia, Edmund and Bartlett pears.

John H. Parnell, Georgia, collection peaches.

O. M. Lord, Minnesota, a new native plum, Rolling Stone.

John C. Ratliff, Indiana, seedling pear.

Prairie Farmer, Illinois, seedling plum.

E. W. Daniels, Wisconsin, three plates apples, Northwestern Greening.

J. G. Kingsbury, Indiana, seedling pear, Warner.

C. A. Green, New York, Lord Nelson apple and seedling pear.

John S. Collins, New Jersey, two plates Comet pear.

Gideon N. Greer, Pennsylvania, mangoes and Alligator pears.

James Beltner, California, Mediterranean sweet oranges, crops of 1884 and 1885, mostly picked August 5th, 1885.

H. S. Anderson, New York, plums, Shipper's Pride.

Bush and Son and Meissner, Missouri, seven varieties grapes.

Prof. A. J. Cook, Michigan, five plates apples.

G. W. Price, Maryland, peaches.

S. T. Jenkins, Maryland, grapes

G. P. Pepper, Wisconsin, five varieties apples and crabs.

Niagara White Grape Co., New York, Niagara grapes.

Daniel Duer, Ohio, fifteen plates apples.

E. T. Field, New Jersey, new seedling apples.

Pratt Brothers, New York, Empire grape and New Brunswick apple.

Mr. Mahr, Michigan, Chinese lemon.

J. H. Tryon, Ohio, three varieties grapes and two varieties pears.

Jenkins, McGuire & Co., Maryland, fruit shipping crates.

Your committee cannot close their report without special honorable mention of the highly meritorious collection of one hundred varieties of pears exhibited by our venerable friend and president, Hon. Marshall P. Wilder. Although it was not his wish that it should come into competition with the other exhibits, nevertheless, in consideration of its excellence, as well as of the invaluable services of the exhibitor to the cause of pomology, your committee unanimously recommend that the Wilder gold medal be awarded to it.

Respectfully submitted,

F. M. HEXAMER.

A. W. HARRISON.

ROBERT MANNING.

J. J. HARRISON.

T. V. MUNSON.

Charles A. Green, of New York, followed with a paper on "The Hardiness of Fruits," in which the idea was held forth that the same plant in a severe climate will, by a gradual process, become increasingly hardy, and may thus become suited to more trying surroundings—a result, by some at least, deemed quite unlikely to occur.

A paper entitled "Small Fruits," from E. Williams, of New Jersey, was next read.

After naming six essential qualities required of fruits of this class, he adds: "No mere money consideration should induce any one to introduce a new fruit unless it possesses some points of superior merit over those of the same class now before the public, and no true horticulturist would do it. And yet these prospective profits and money interests are often the most prominent inducements to allure purchasers, and, as a rule, the poorer the fruit the more prominently this feature is presented. These remarks will apply as well to our large fruits as to the small ones."

Again he remarks: "A forward movement is taking place all along the line, and they who fondly stick to the Concord, as the best grape in existence, with those who accept the Hovey as the ideal strawberry, unless they accept the facts as they exist and join in, will 'get left' most assuredly. To those most active in this movement let me drop a word of caution, not to overlook the fifth requisite (quality) I have named, but rather make it the polar star of their efforts."

A long discussion upon strawberries followed, confined to the list of market varieties.

The discussion of "Blackberries" came next and was opened by a paper from G. Cowing, of Indiana, the reading of which was followed by the discussion of varieties, after concluding which,

"Raspberries" were taken up, and a very full discussion of varieties was had, lasting till the close of the session.

The evening session was devoted to the discussion of "Economic Entomology," which was opened by a very interesting address from Professor A. J. Cook, of the Michigan Agricultural College, fully illustrated by means of charts and diagrams.

On Friday morning the meeting was called to order by first Vice-President Patrick Barry, and Commissioner Colman, of Washington, being present, was called upon for some remarks as to what the department can do for horticulture and pomology.

The commissioner addressed the audience at some length, and was listened to with much interest.

At the close of his remarks, W. J. Beal, of Michigan, offered the following, which was unanimously adopted:—

Resolved, That this society heartily commends the action of Commissioner Colman, of the United States Department of Agriculture in the appointment of a person to investigate the diseases of plants, and desires to assure him of continued support in his efforts to develop this new line of work in the department.

Grapes were then taken up, and American Grapes were treated of by T. V. Munson, of Texas, in a paper entitled,

"Importance of Botanical and Other Scientific Knowledge to the Progressive Horticulturist, and especially to the Viticulturist."

This was a thoroughly scientific paper, and quite too exhaustive to warrant

an attempt to epitomize. It might, very profitably, become a pocket reference book by the student of viticulture.

This was followed by the discussion of varieties of grapes.

At the close of the discussion of varieties, Geo. W. Campbell, of Ohio, gave a valuable paper in continuation of the general subject.

This was followed by the report of the committee on native fruits, presented by Robert Manning, of Massachusetts.

W. I. Chamberlain, of Ohio, then gave a paper on "The Needs and Methods of Gathering Fruit Statistics."

Parker Earle of Illinois, then addressed the society on the "Packing and Shipping of Fruits."

"Fruit Trees for the Northwest" was the subject of an address by Peter M. Gideon, of Minnesota, in which he gave his personal experiences in the origination of new fruits adapted to the climate conditions of his own state.

Professor James L. Budd, of Iowa, continued the discussion by adding some account of the experiments of himself and others. He spoke also of the difficulties of nomenclature to be overcome in the case of introduced Russian varieties.

A paper was read by J. Saul, of the District of Columbia, on "Fruits of the South."

George W. Lawton, of Michigan, followed with a paper on "Hard Problems in Pomology."

The closing paper of the afternoon was an exhaustive essay on "The Culture of the Cocoonut," by E. T. Field, of Red Bank, New Jersey.

The evening session was modeled after the usual closing sessions of the Michigan Horticultural Society. Happy speeches were made by twenty gentlemen, called out by sentiments announced by Charles W. Garfield, of Michigan, after which the audience joined heartily in singing the Doxology, and the session adjourned.

The joint annual fair of the State Agricultural and Horticultural Societies was held at Kalamazoo, on September 14th to 18th, 1885.

Although the hall had been increased in size since last year, it still proved inadequate to accommodate all the entries, which numbered one thousand, comprising four thousand five hundred plates of fruit and five hundred pots of plants.

The collection of one hundred varieties of pears from President Wilder, of the American Pomological Society, shown at Grand Rapids the previous week, made a part of the present exhibit.

Miss Ida Stearns, who had been charged with the ornamenting of the hall, displayed excellent taste in her arrangements and in the choice and use of material for the purpose.

At a rather late period of the exhibition a fine collection of apples came from the Midland Fair Association, and although not entered for premiums, were placed on exhibition.

An exhibit of pears and oranges from Santa Clara, California, and a fine display of foreign grapes, grown under glass, by A. Sigler, of Adrian, were attractive additions to the exhibition.

A very considerable quantity of fruit brought for exhibition was not unpacked for want of space.

The annual meeting of the State Horticultural Society for 1885 was held at Benton Harbor on December 1st to 3d.

The society was called to order at two o'clock by the president.

Some time was occupied in the reading of correspondence and reports from various localities, after which the first topic upon the programme came under consideration and the discussion was opened with a paper from J. N. Stearns, of Kalamazoo, entitled:

SOME OF THE NEW MARKET FRUITS.

Several such were named, as the Crescent, Manchester and Mount Vernon strawberries; Cuthbert, Gregg, Ohio and Tyler raspberries; Downing gooseberry; Snyder blackberry; Moore, Worden and Niagara grapes, and Golden Drop peach.

The remainder of the afternoon was devoted to a discussion of varieties.

The evening session was opened by an address of welcome on behalf of the Berrien County Horticultural Society by its secretary, A. J. Knisely.

The president made an appropriate response, after which a paper was read by W. A. Smith, of Benton Harbor, on

INSECT ENEMIES AND THEIR DESTRUCTION.

The subject was comprehensively treated, closing with an appeal to spare the birds.

This appeal started an animated discussion upon the bird question.

The insect question having been resumed,

W. A. Brown remarked, "The cut worms are very troublesome in our locality. It is necessary to use all known means to keep them in check. The Ransom chip method, as used for curculio, is some help; a tunnel of thick paper prevents them from climbing the tree.

A. J. Knisely replied: The moths may be caught in July and August, by a light over a pan of kerosene. That is the time to do the fighting.

QUINCE GROWING

was next taken up and the discussion was opened by E. H. Scott, of Ann Arbor, who intended to plant several hundred the next spring, using only the Orange quince, as he found the Champion too late in ripening.

OVER PRODUCTION

was the subject of a paper from S. L. Fuller, of Grand Rapids, which was read by the secretary.

The subject was not discussed, and the question of

METHODS OF PURCHASING NURSERY STOCK

the discussion of which was opened by A. G. Gulley, of South Haven, who advised to deal directly with the nursery, avoiding agents. He would go as far as might be needful to get what he wanted; but would not recommend to go south of the Ohio river in spring.

GRAPE ROT

was the last topic of the evening, and the discussion was led by W. A. Brown, of Stevensville. He stated that the rot had become very troublesome in some parts of Berrien county.

The subject was discussed at considerable length, after which the meeting was adjourned till the morning.

The Wednesday morning session was opened by a paper from W. A. Brown, of Stevensville, on

MARKETING FRUITS,

which treated the subject quite at length. Without a general discussion, however, the next subject, that of

GROWING ONIONS FOR MARKET,

was taken up, and Charles S. Crandall, foreman of the Agricultural College gardens, read a paper on the subject, which was followed by a general discussion of the topic.

The annual address of the president was then read, which was followed by that of the librarian and afterward by the report of the treasurer, which showed a balance to the credit of the general fund of \$1,528.34. The present life membership fund is \$1,950.00.

The report of the standing committee on landscape gardening was submitted, consisting of a paper on gardening on a city or village lot, by the chairman, James Satterlee.

The standing committee on vegetables, through its chairman, W. W. Tracy, submitted a report on

THE NEWER VEGETABLES.

T. T. Lyon, chairman of the committee on new fruits, also submitted a report.

The election of officers for the ensuing year was then held, with the following result:

President—T. T. Lyon, South Haven.

Secretary—Charles W. Garfield, Grand Rapids.

Treasurer—S. M. Pearsall, Grand Rapids.

Members of Executive Board—L. H. Bailey, Jr., Agricultural College; A. G. Guley, South Haven.

The next subject upon the programme was then taken up, it being

THE USES AND ABUSES OF PRUNING.

The discussion was opened by T. C. Hagaman, of Benton Harbor, with a paper, and the reading was followed by a short discussion, when a recess was taken till the afternoon.

The first topic considered at the Wednesday afternoon session was

STORING CELERY FOR FAMILY USE.

The subject was opened by a letter from P. W. Johnson, of Grand Rapids, read by the secretary.

His practice had been to pack in boxes and store in the cellar. He had heard Sphagnum highly recommended for packing about the roots.

Others had trenched in sand.

W. W. Tracy said bleached celery is very liable to rot if allowed to become wet.

F. E. Skeels, Grand Rapids, read a paper entitled

GROWING AND MARKETING WINTER SQUASHES.

He found great care requisite in handling, and the results uncertain.

W. K. Munson thought there was no other business so near gambling as squash growing.

C. A. Sessions had a neighbor who realized \$3,800, in Boston market, from forty acres of squashes.

SWEET CORN

was next discussed, the subject being opened by U. B. Webster, of Benton Harbor, followed by remarks from H. W. Davis, of Lapeer, and W. W. Tracy, of Detroit.

"The Farmers' Table Supply" was the subject of a very practical paper by Mrs. Mary N. Allen, secretary of the Lenawee and Hillsdale Horticultural Society, which was followed by a short discussion.

"Easy Management of Window Plants" was the title of a paper read by Delos Newton, of Cooper.

An early recess was taken to afford time to visit a package factory and examine a method of fastening fruit packages by means of wire instead of tacks.

The Wednesday evening session opened with the consideration of the following, offered by J. N. Stearns, of Kalamazoo.

"It having frequently come to our knowledge that the employes of express companies have, through carelessness or wantonness, destroyed the value of many packages of fruit which, by more careful handling, might have been preserved in good order; that the continued abuse of fruit packages has led many fruit growers to abandon the transportation of fruit over lines controlled by the express companies, and that such gross carelessness, if continued, will destroy the trade to many towns only reached by such express companies;

Resolved, That this society condemns, in the strongest terms, such wanton carelessness.

"Climbers and Their Uses" was the first topic of the evening, and its discussion was commenced by Professor L. H. Bailey, Jr., of the State Agricultural College, with some additional remarks by W. W. Tracy.

C. W. Garfield, of Grand Rapids, introduced the discussion of the topic, "Making and Managing Lawns, which evolved a short discussion.

"Twelve Good Native Shrubs" were then named and described by O. C. Simonds, of Chicago, comprising Prickly Ash, (*Zanthoxylum Americanum*); Burning Bush or Waahoo, (*Euonymus atropurpureus*); Early Wild Rose,

(*Rosa blanda*); June Berry or Shad Bush, (*Amelanchier Canadensis*); Witch Hazel, (*Hamamelis Virginica*); Red Twigged Dogwood, (*Cornus stolonifera*); Snowberry, (*Symphoricarpos racemosus*); Indian Currant, (*Symphoricarpos vulgaris*); Common Elder, (*Sambucus Canadensis*); High Bush Cranberry, (*Viburnum opulus*); Sassafras, (*Sassafras officinale*), and Hazel, (*Corylus Americana*).

As complementary to this

T. T. Lyon, of South Haven, followed with a list of "Twelve Good Introduced Shrubs," as follows:

Forsythia viridissima; *Cydonia Japonica*, (Flowering Quince); *Eriochorda grandiflora*, (sometimes known as *Spirea grandiflora*); *Syringa Persica*, (Persian Lilac); *Deutzia crenata fl. pl.*, (Double Flowering Deutzia); *Deutzia gracilis*; *Weigela rosea*; *Viburnum plicatum*, (Japan snowball); *Rhus cotinus*, (Smoke Tree, Purple Fringe); *Spirea Douglassi*; *Hibiscus Syriacus*, (Althea, Rose of Sharon); *Hydrangea paniculata grandiflora* (Hardy Hydrangea).

LAWN BEDDING

was the title of a paper by W. K. Gibson, of Jackson, read in his absence by E. H. Scott, giving many valuable suggestions respecting the accompaniments and management of the lawn.

COUNTRY CEMETERY DECORATION

was the subject of the final paper of the evening by R. T. McNaughton, of Jackson.

The first topic of the Thursday morning session was

FRUITS OF THE BEST QUALITY.

The topic included only fruit adapted to family use, but so habituated were the speakers to the consideration of little beyond market values that they very generally led off upon that consideration.

The subject was discussed quite at length, considering each class of fruits separately, but eliciting little that need be reproduced here.

The committee to which the several reports of officers had been submitted now reported; also the committee on exhibits, both of which were accepted and adopted.

TRAINING THE VINE

was next discussed for a short time, several modes of training being considered.

STORING WINTER FRUITS

was the next topic, the consideration of which was opened by a paper from B. G. Buell, of Little Prairie Ronde.

An original poem on "Berries," by U. B. Webster, of Benton Harbor, closed the exercises of the morning session.

The session of Thursday afternoon was opened by A. J. Knisely, of Benton Harbor, with a paper on

MANAGING TENDER FRUITS.

The paper dealt mainly with small fruits, and was followed by a discussion of modes of protecting blackberries and grapes.

STRAWBERRY EXPERIMENTS,

was the subject of a few moments' discussion by Thomas Wilde, of Coopersville.

CONVENIENT IMPLEMENTS

were next discussed, bringing out nearly as many preferences as there were speakers.

A machine for cutting strawberry runners was shown by M. Richardson, of Owosso.

STIMULATING EARLINESS IN SMALL FRUITS

was the subject of a short discussion, bringing out the fact that soil, cultivation and aspect all have to do with the matter of earliness; also, the lake influence delays maturity in localities open to its influence.

PROTECTION FROM FROST

being under consideration, stirring the soil in spring was thought to increase the liability to frost. Grapes covered with cotton cloth were said to have suffered more injury from frost than those left exposed.

CAUSES WHICH AFFECT THE VITALITY OF SEEDS

was the subject of a short discussion, as was also the topic of "Timber Belts for Protection," which was fully discussed by S. M. Pearsall, of Grand Rapids, and several others.

FOREST LEGISLATION

being the next topic, C. J. Monroe and C. W. Garfield considered the subject somewhat at large, and the difficulty in inducing the mass of landholders to consider the subject was thought to be one of the worst practical difficulties in the way.

TIME TO CUT TIMBER

was the subject of a paper by L. D. Watkins, of Manchester.

On motion of R. D. Graham, the treasurer was authorized to reimburse the Berrien County Horticultural Society the expense of hall rent for this meeting.

After the report of the committee on resolutions, and its adoption, the meeting was adjourned.

The State Catalogue of Fruits was revised and republished for the fourth

time at the close of the volume of the society's transactions for the year 1885.

At the close of the year 1885 the State Horticultural Society had, in working order, thirty-two local auxiliaries, widely distributed among the more southerly counties of the Lower Peninsula.

For the purpose of gathering many fragments of the horticultural history of this State and putting the whole in permanent shape for preservation and reference, the executive board proposed to T. T. Lyon to undertake the work of preparing such a history, to appear in the transactions of the State Horticultural Society.

At a meeting of the executive board, held at Kalamazoo, on January 4th, 1886, action was taken looking to the organizing of a committee on landscape gardening and architecture, and the securing of appropriate plans for rural homes for the forthcoming volume of transactions of the society.

Professor L. H. Bailey, Jr., was appointed chairman of a committee on botany and vegetable physiology.

At a meeting of the executive board held at Jackson, on February 8th, 1886, the delegation to confer and arrange with the State Agricultural Society, reported their offer to be \$1,200 for expenses and \$800 for premiums, which offers were directed to be accepted, but with an understanding that it was not to be considered as a precedent.

T. T. Lyon having, some time since, offered the society his library of horticultural works, the secretary was instructed to proceed to South Haven to attend to the shipment of the same.

Subsequently, owing to the engagement of Mr. Lyon to prepare a history of horticulture in Michigan, the delivery of the library was postponed, to allow him the use of it for that purpose.

The executive board authorized and directed the preparation and exhibition at the coming State fair, of an educational exhibit, and placed the collection and arrangement of the same in the hands of A. G. Gulley.

The winter meeting of the State Horticultural Society for the year 1886 was held at Adrian, Lenawee county, on February 9th to 11th, in acceptance of an invitation from the Lenawee County (formerly Adrian) Horticultural Society.

The society came to order on the evening of the 9th, and was welcomed in an appropriate and eloquent speech, which was responded to by the president.

THE MANAGEMENT OF LOCAL HORTICULTURAL SOCIETIES

was considered in a carefully prepared paper by S. B. Mann, of Adrian, and was followed by a discussion involving the question, how best to proceed to interest the women and children in such meetings.

METHODS OF BUYING AND SELLING TREES AND PLANTS

next received attention in a paper read by B. W. Steere, of Adrian, replete with useful lessons to buyers, to say nothing of its illustrations of the practice of certain classes of sellers. The paper closed by alluding to the overpraise bestowed in some catalogues and other horticultural advertising, especially upon new varieties, asking, "Is not the praiseworthy desire to guard customers against mistaking, and to supply them with the very best of everything in danger of being supplanted by this talent for overwrought description?"

J. N. Stearns followed up this topic with a paper on

HOW TO BUY NURSERY STOCK.

He gave the caution: "Do not buy of an agent who has some extraordinary new fruit, curculio proof, iron clad, and of wonderful size and extra quality, for which, on account of these superior qualities, he is obliged to charge five or six prices." He also advised against buying of a nurseryman simply for the reason that he offers a little under the price of most others, but of whose standing you are ignorant. Of small fruit plants he advised to buy as near home as practicable.

After a short general discussion of the subject, the president announced the committees for the meeting and the session was adjourned till the next morning.

The Wednesday morning session was commenced by the reading of a letter addressed by S. S. Bailey, of Grand Rapids, to Commissioner Colman, of the department of agriculture, urging that the department take steps for a thorough scientific examination into the nature of the disease of the peach known as yellows, as a step toward a possible remedy. The letter had been endorsed by the Grand River Valley Horticultural Society, and that of the State Horticultural Society was also asked and granted.

T. T. Lyon presented a preamble and resolution, as follows, which, on motion of B. W. Steere, of Adrian, was unanimously adopted:

WHEREAS, With the rapid increase and development of the fruit growing interests of our country in their various forms, and with the corresponding increase of the consumption of fruits, the pomological interests of our country have assumed a magnitude and importance not heretofore anticipated or provided for; and,

WHEREAS, The success of varieties of fruits usually varies greatly, and to some extent even unaccountably, with change of locality; and,

WHEREAS, Long periods are usually required for the satisfactory local testing of varieties, and for this reason extensive interchange of experiments, as well as a wider interacquaintance with the fruits of different localities, becomes important: therefore,

Resolved, That this society deems this department of agriculture of such importance as to warrant, and even demand, the fostering aid of a special branch of the National Department of Agriculture, under the supervision of an expert and capable pomologist, with the facilities and appropriations requisite to the efficient discharge of the duties of such position.

The secretary then read a letter from Erwin F. Smith, of Ann Arbor, asking that the botanical department of the University be furnished with data regarding the spread of grape rot in the State.

FERTILIZERS

came next under consideration, and the discussion ran upon commercial manures, which in very many cases were used in connection with barn-yard manures. Ashes had proved specially effective upon small fruits.

GREEN MANURING

was discussed by C. J. Monroe, as practiced at South Haven.

ENRICHING THE LAWN

was discussed by Garfield, Hough, Sigler and Steere, bringing out, as the most prominent fact, the great value of wood ashes for this purpose.

THE RELATION OF BEES TO HORTICULTURE—BENEFITS AND INJURIES—

was the subject of a paper by W. Z. Hutchinson, of Rogersville, Mich., which discussed the subject mainly from the bee-keepers' standpoint of the value of insects in the transfer of pollen.

The Wednesday afternoon session commenced with the reading of a paper by Dr. Woodland Owen, on

MAKING WALKS AND DRIVES.

The subject was considered with reference to landscaping considerations, the modes of providing for permanency, and the requisite provisions against washing or guttering upon slopes.

A short discussion arose respecting the use of ashes for such purpose.

An excellent paper was read by Porter Beal, of Rollin, on

TREES IN AND OUT OF PLACE.

This was followed by a discussion which brought out several pertinent questions respecting the planting of highway trees—what to do with overgrown trees in yards and the various effects that may be produced by their use.

Mrs. Mary N. Allen, of Hudson, read an interesting paper entitled

IN-DOOR HORTICULTURE,

concluding with the remark of a writer that "Where he finds house plants in the home, he is sure of a kindly welcome," adding, there is a broadening and refining influence connected with them that will lead the thoughts through these green pets of nature up to nature's God.

After a short discussion, E. W. Allis talked a short time on

MANAGING THE INSECTS.

After a few questions on the subject had been considered, the secretary read a letter from J. J. Harrison, of Ohio, on

ORCHARD DRAINAGE,

after which, in continuation of the subject, a letter was also read from Professor M. Miles, of Amherst, Mass., and this followed by a general discussion confined mainly to the liability of tile drains to become clogged by the roots of growing trees.

The session closed with the report of A. G. Gulley, as delegate to the recent meeting of the Western New York Horticultural Society.

The Wednesday evening session opened with a discussion of the topic

ROTATION IN FRUIT PLANTATIONS AND GARDEN CROPS.

But little discussion occurred on this topic, instead of which a miscellaneous discussion arose, which occupied considerable time.

On the subject of

HORTICULTURE IN THE DEPARTMENT OF AGRICULTURE,

Mr. H. E. Van Deman, the recently appointed pomologist of the department, being present, was called on, and gave a short talk respecting the purposes of that department, so far as this interest is concerned, which he stated were not yet fully matured, his present visit being for the purpose of collecting information for the purpose.

D. G. Edmiston stated that the Lenawee Society had recently recommended a list of grapes for that region, as follows :—

Best five for family use: Concord, Worden, Cottage, Brighton, Delaware. Best five for market: Concord, Pocklington, Niagara, Worden, Brighton.

The question was asked: "If confined to one variety of grape, which should be chosen?" To this there were eighteen responses.

For Worden, 6; Brighton, 4; Concord, 3; Delaware, 2; Ulster Prolific, 1; Woodruff, 1; White Ann Arbor, 1.

The closing session on Thursday morning opened with the report of the committee on fruits, vegetables, plants, insects, etc.—a very creditable display.

The report was accepted and adopted.

The report of the committee on resolutions was then offered, accepted and unanimously adopted.

T. T. Lyon, of South Haven, then read a paper on

HORTICULTURAL NOMENCLATURE,

giving some account of the adoption of a code of rules to govern the nomenclature of fruits, by the American Pomological Society; its promulgation for the use of societies and people generally, and its adoption by the Michigan State Horticultural Society.

After the reading of the paper the society adjourned.

The society held its summer meeting for the year 1886 at North Lansing, on June 15th and 16th.

Although thinly attended on account of its occurrence during the interesting scenes and events of semi-centennial week, at no one of its summer meetings have its discussions been more interesting and instructive.

At the opening of the first session on the evening of Tuesday, June 15th, the first topic was

STRAWBERRIES FOR THE MARKET,

which was introduced by a letter from Thomas Wilde, of Coopersville, who would plant strawberries as soon as vegetation starts in the spring. If in the summer, as soon as plants are mature. He thought the time was at hand when strictly pistillate varieties only should be planted in experimental gardens.

The letter of Mr. Wilde was followed by a discussion which was mainly confined to the question of the effect of the use of pistillate varieties and the propriety of early planting.

A letter was read from George S. Linderman, of Grand Rapids, on his

STYLE OF PLANTING,

by which two persons would be able to plant an acre in one day, with time to spare.

A. G. Gulley discussed the question whether to grow

IN HILLS OR IN MATTED ROWS,

and argued that matted rows are more profitable so far as the Chicago market is concerned.

T. T. Lyon stated that in Ottawa and Muskegon counties it was found more profitable to grow Wilsons in hills for the Chicago market.

The secretary read a paper from Hon. Parker Earle, the "strawberry king" of Illinois, giving his

METHOD OF CULTURE,

including the packages used and manner of shipment.

MULCHING,

with various substances, was discussed. The most satisfactory article for the purpose, when attainable, seemed to be marsh hay cut before the seeds ripen.

VARIETIES FOR DIFFERENT SOILS

were discussed at considerable length, but no single variety named received general approval.

Dr. Beal followed, giving an illustration of the botanical methods practiced at the college, by introducing seventeen young ladies and gentlemen of his class, each with a distinct topic which they had studied by the aid of the microscope. These studies were illustrated by drawings. The following were the topics discussed:—

- | | |
|--|---|
| 1. Structure of a leaf. | 10. Why nuts are hard. |
| 2. The mouths of a leaf. | 11. Tough and brittle white ash as seen magnified. |
| 3. Young hairs of a leaf. | 12. Structure of a grain of wheat. |
| 4. Sting of a nettle. | 13. Pollen and its growth. |
| 5. Protoplasm in motion. | 14. Quince rust. |
| 6. Palisade cells in a leaf. | 15. Corn smut. |
| 7. Starch of common and Arizona potato compared. | 16. A study of common mould. |
| 8. The frame work of a leaf. | 17. Effects of severe cold or heat on cells and their contents. |
| 9. Fibers of cotton, flax and wood compared. | |

The students were questioned upon these topics, and gave prompt and distinct answers, indicating a thorough familiarity with their subjects.

Dr. Beal remarked in explanation: "These young people, who are members of the sophomore class, will now give you some notion of the things they have been studying. During the spring term they spent two hours daily in the botanical laboratory, investigating plants, each aided by a compound microscope and other apparatus. For most of the time they all work on the same subject, but each member of the class has a special topic, to which he gives more attention. The subjects selected for this meeting have not been worked up any better than others which are not here placed on your pro-

gramme. The selections were made with the intention of giving a variety of things which ought to interest horticulturists. Each student made the drawings about which he speaks, and then enlarged them as they appear before you. India ink was used on cardboard. The drawings are all original from nature, with the exception of a part of two plates."

The Wednesday morning session was called to order by Vice President W. K. Gibson, and the discussion of strawberries was resumed by the reading of a letter from R. D. Graham, of Grand Rapids, on

VARIETIES TO SUIT DIFFERENT MARKETS,

the reading of which was followed by a short discussion, followed by a paper from P. W. Johnson, of Grand Rapids, on

METHODS OF GATHERING,

followed also by a short discussion; after which A. J. Knisely, of Benton Harbor, gave a paper upon

MANAGEMENT OF STRAWBERRY PICKERS.

After the reading of the paper, and a few remarks by A. G. Gulley, of South Haven, the subject of

PACKAGES

came up for discussion, bringing a variety of practice by different persons.

HOW TO SECURE IMMENSE YIELDS

was the subject of a paper from P. M. Augur, State Pomologist of Connecticut.

STRAWBERRIES FOR MARKET

was the subject of a short paper by W. A. Brown, of Benton Harbor.

STRAWBERRIES FOR HOME USE

was the subject of a short discussion; after which

LARGE YIELDS FROM A FEW PLANTS

was discussed in a carefully prepared paper by J. B. Rogers, of New Jersey, in which the system of management throughout was fully considered.

THE PLEASURE OF GROWING STRAWBERRIES FOR THE TABLE

was the subject of a short address by W. K. Gibson, of Jackson.

HOW TO PROLONG THE SEASON

was considered by J. N. Stearns, of Kalamazoo.

HEALTHFULNESS OF STRAWBERRIES

was the subject of a few judicious remarks by Dr. O. Marshall, after which, Hon. H. G. Reynolds ended the consideration of strawberries by telling how to eat them.

Raspberries were next considered, and a paper was read on

WHEN TO PLANT,

from C. A. Green, of Rochester, New York.

E. H. Scott had set two acres of Marlboro, with green plants, with complete success.

PROPAGATION OF THE DIFFERENT SPECIES

was the subject of a short paper by T. T. Lyon, of South Haven.

VARIETIES TO SELL

was the subject of a paper received from Dr. F. M. Hexamer, of New York, the reading of which was followed by a full discussion of the subject.

VARIETIES TO EAT

was the subject of a short paper from P. C. Reynolds, secretary of the Western New York Horticultural Society, who seemed to prefer Blackcaps for such purpose.

GATHERING AND MARKETING

was discussed by E. H. Scott, W. K. Gibson, and C. W. Garfield.

HOW AND WHEN TO PRUNE

was considered by E. H. Scott and his remarks were followed by a paper on the subject from F. E. Skeels, of Grand Rapids.

REMOVING OLD CANES

was considered in a paper from M. Crawford, of Ohio, who preferred to do this work in spring.

He was followed by C. W. Garfield, who preferred the fall.

TIME TO PLANT RED VARIETIES

was the subject of a paper from Rev. Mr. Day, of Ann Arbor, who, with such plants as he would choose, would plant in the fall.

DISTANCES APART FOR EXTENSIVE PLANTATIONS.

T. T. Lyon, for blackcaps or blackberries, would allow seven feet between rows.

C. W. Garfield's plantations were eight feet between the rows.

MULCHING.

E. H. Scott considered good cultivation the best mulch.

The Wednesday afternoon session opened with an address by Professor L. H. Bailey, Jr., on

THE BOTANY OF THE GRAPE.

He referred to the failure of the European *Vinifera* in our climate, and to the valuable results which have followed the efforts to improve our natives.

In response to the question: "What is the Distinction between a Species and a Variety?" he said:

"The Linnaean idea of a species was 'a succession of individuals which reproduced themselves from seed.' Cultivated varieties, whose origin is known, and which so reproduce themselves, like our different kinds of corn, might be called artificial species; but they have received the name of races. Dr. Asa Gray says: 'species are judgments.' A clear cut group, having no intermediate forms connecting it with others, is called a species; otherwise one is said to be a variety of the other, and both are included in the same species."

PROTECTING ORIGINATORS OF NEW FRUITS

was the subject of a paper by Jacob Moore, of Attica, New York.

After the reading a committee was appointed to consider the subject and report at a subsequent meeting; but no subsequent action on the subject seems to have been had.

MARKET SORTS AND MARKETING

was the subject of a short paper by C. D. Lawton, of Lawton, after which a paper on

THE IDEAL MARKET AND HOME GRAPE

was read from J. S. Woodward, of Lockport, New York.

The next topic was

VARIETIES THAT ARE FINE BUT HARD TO GROW,

upon which a paper was contributed by George W. Campbell, of Ohio.

A paper on the Comparative Market Standing of

RED, WHITE, AND BLACK GRAPES

was next read from T. V. Munson, Denison, Texas.

The hour having now arrived which had been assigned in the programme for

A STUDY IN ENTOMOLOGY,

the meeting was given in charge of Professor A. J. Cook, of the Agricultural College, who had been invited to present through his students, at this meeting, such subjects as he might consider appropriate to the occasion.

At his call D. A. Pelton gave an illustrated history of the Imported Currant Borer (*Aegeria tipuliformis*.)

This was followed by G. W. Park, on the subject of Plant Lice or Aphides, and their enemies, with an account of the remedies that may be employed against them.

Professor Cook now remarked: It is not always the great things of this world that make the most disturbance. We have in the diseases which infest our plants an illustration of the dire effects of little plant growths, too small to be seen by the naked eye. In the life with which the entomologist has to deal we also find abundant illustration of the amazing destructiveness of animals too small to be seen without a microscope. It is upon one group of these "small fry" that I have invited Mr. C. P. Gillette to talk with you to-day. He will discuss the subject of

MITES,

of which several kinds were described and illustrated, and their life habits portrayed.

The foregoing exercises were closed with a short miscellaneous discussion respecting the curculio, and also the cause of the premature dropping of its leaves by the plum tree, which Professor Cook thought could not be caused by an insect.

Professor Beal thought it might be caused by a small fungus.

THE JAPANESE PERSIMMON (*DIOSPYRUS KAKI*)

was the subject of a paper by Kizo Tamari, a student of the Agricultural College from Japan, who gave an interesting account of the Japanese modes of propagation, and the uses made of the fruit.

The grape discussion was resumed, and the secretary read a letter from D. W. Beadle, of Ontario, on

FASHION IN GRAPES,

this being apparently supposed to be mainly a question of color.

A paper was read on

PRUNING THE GRAPE,

by N. E. Smith, of Ionia. In closing he states that Moore and Hartford were in bloom June 1st, 1886; Concord, Delaware and several others, June 9th. In 1875 Concord did not bloom till July 3d.

A letter was read from Jacob Ganzhorn, of Ann Arbor, giving an account of a

NATIONAL VITICULTURAL ASSOCIATION

recently organized at Washington, D. C., under the auspices of the Agricultural Department.

ORNAMENTAL USE OF VINES

was the subject of a paper by Ossian C. Simonds, of Wright's Grove, Ill.,

which was supplemented by remarks from Mr. Crandall, of the college, on "Grapes in Out-of-the-way Places," and by W. K. Gibson on "Ornamental Uses of the Vine."

The session of Wednesday evening opened with a short paper from T. T. Lyon on

PROPAGATION OF THE CHERRIES,

in which he described the usual modes of nursery propagation and the stock used for the purpose.

BIRDS AND CHERRIES

was the theme of an address by James Satterlee, taking decided ground in favor of the birds, a position in which he was warmly sustained by several speakers, although others doubted or dissented.

W. W. Tracy talked about

CUCUMBERS,

but seemed to prefer that after consequences should be discussed by those who eat them.

A special order having been arranged for this hour the conduct of the meeting was given into the hands of Professor Bailey, who occupies the chair of horticulture at the Agricultural College. He remarked that the subjects to be discussed by the young men whom he would introduce had been marked out by the students themselves; that his aim in teaching horticulture was to lead the young men to see and investigate and think for themselves.

He then introduced Mr. H. H. Winde, who gave an interesting account of the

HARDINESS OF SOME PLANTS,

as indicated by the experiences of the past winter, especially with such as have been recently introduced or are but little known,

Mr. A. Pettet was then introduced and spoke of

SOME EXPERIMENTS IN GRAFTING.

The experiments described were mainly cases of grafting upon dissimilar stocks apparently for the purpose of determining the extent to which the use of these stocks may become practicable or to determine the amount of influence that may be exerted by the stock upon the cion and vice versa.

Mr. E. W. Redman was next introduced and read an interesting paper on the

BOTANY OF THE RASPBERRY AND BLACKBERRY.

This was followed by the introduction of J. C. Duffey, who gave a description of

A FIRE HOT BED

which had been constructed and used at the college as a substitute for a manure hot bed.

Mr. H. S. Thiers described a

WIRE TRELLIS FOR PEAS,

devised to determine its cost as compared with other modes of training. The wire proved to be the least expensive, even counting the first year only.

Mr. C. L. Hinebaugh was then called upon and gave an object lesson on

LOCATING ENTRANCE WALKS AND DRIVES,

illustrating it with a sketch made from the grounds of the college.

The last paper was by Theo. A. Stanley, on

EXPERIMENTS UPON GERMINATION OF SEEDS,

undertaken to determine the correctness of certain theories, and the influence of certain substances in promoting germination.

The committee reported a creditable display of articles, including apples, strawberries, dried Japanese persimmons by Kizo Tamari, illustrating the method of preserving in his country, also a machine for pruning strawberry runners, deemed worthy of notice.

The report was accepted and adopted.

The report of the committee on resolutions was also submitted and adopted, after which the society adjourned.

The seventeenth annual fair of the Michigan State Horticultural Society was held in the city of Jackson, jointly with that of the State Agricultural Society on the 13th to 17th of September, 1886.

The hall was that occupied at Kalamazoo last year, which had been removed to Jackson for the purpose; but its capacity proved insufficient, and a considerable number of plant exhibits were shown in main hall and in the president's office—a state of things quite inconvenient for examining committees.

A new feature of the exhibit of fruits this year was an educational collection of fruits, including many unknown or little known varieties, whether valuable, attractive or otherwise, all correctly labeled, but competing for no premium; and with an expert (Mr. A. G. Gulley) at hand to give information when desired.

A portion of the central space was sodded to represent a miniature lawn upon which lawn bedding was illustrated by plants in position. Ribbon bedding was also illustrated on a portion of the same, by means of cut flowers, etc.

Insects and insecticides were also shown by Professor A. J. Cook; microscopes and botanical illustrations by Professor Beal; and tomatoes and grapes by Professor Bailey.

Another new feature was the offer, in division B., of a premium for the most artistic and attractive arrangement of fruits, flowers, plants, vegetables, grasses and cereals, to occupy a specified amount of side wall, with corresponding ceiling and table room.

The number of entries exceeded one thousand.

The executive board had for several years been discussing the expediency of the removal of the bars from the front of the exhibition tables as a means of economizing space, but had hesitated, fearing that the fruit might prove

too strong a temptation to those inclined to be light fingered. The experiment was tried at this exhibition, with some hesitation, and succeeded very satisfactorily except that, at one time, during a heavy rain storm, such a crowd gathered in the hall that a temporary bar of rope became necessary to keep the crowd off the tables.

The experiment of employing an expert from abroad to aid in the awarding of premiums, by acting as chairman of committees, proved eminently satisfactory.

At a session of the Executive Board, held at Jackson on September 14th to 16th, 1886, during the continuance of the state fair at that place, a diploma was awarded to the department of Botany of the Agricultural College, and one also to the department of Horticulture, for the display made by Professors Beal and Bailey at the State fair; also a letter of acknowledgment to Professor Cook, for an entomological display.

Professor Bailey was requested to view an exhibit of crab apples from Peter M. Gideon, of Minnesota, and to express to him the appreciation of the society therefor.

The board ordered the issue of a certificate of life membership in the society to G. B. Brackett, of Iowa, for valuable services, rendered free of charge, in the awarding of premiums at the State fair.

In introducing his account of the seventeenth annual meeting of the State Horticultural Society. Secretary Garfield says: "It was seventeen years ago that the Michigan State Horticultural Society was organized in Grand Rapids; and, for two years, its meetings were held monthly, in a small room, the use of which was donated by Mr. S. L. Fuller, who has been prominently connected with the society ever since, and whose faith in the good work has never flagged for a single day."

"In 1872 the society broke away from its moorings, and but once since has it returned for a convention in the Valley City. Immediately after the state society began to occupy its whole field, the fruit growers about Grand Rapids formed an organization of their own, named it the Grand River Valley Horticultural Society; and it has had a thriving existence to this day.

It was in acceptance of an invitation from this organization that the State Horticultural Society convened in Royal Arcanum parlors, at Grand Rapids, for its annual convention of 1886."

The first session of the annual meeting of the society was called to order by the president on Tuesday evening, November 30th, at 7:30 o'clock.

After the reading of correspondence in the hands of the secretary, Vice-President W. K. Gibson was called to the chair and the president proceeded to read his annual address, which contained various suggestions and recommendations.

The address, so far as its recommendations were concerned, was referred to a committee consisting of S. L. Fuller, of Grand Rapids; Hon. C. J. Monroe, of South Haven, and Professor L. H. Bailey, of Agricultural College.

The annual statement of the librarian was then submitted. It was accepted and ordered placed with the proceedings of the meeting.

The secretary's annual report was next received. It gives the number of life members of the society as 202, making the amount of that fund \$2,020.

The report of the treasurer shows the amount received during the year, including balance from 1885, to be-----	\$3,251 10
Amount expended during the year-----	2,015 04
Balance remaining on hand-----	\$1,236 06

The following subsidiary report was received from Col. Brackett, of Iowa, the gentleman who so kindly and satisfactorily assisted in making the examinations and awards at the last State fair :

To the Executive Board of Michigan State Horticultural Society:

GENTLEMEN—Having received a very cordial invitation from you, through President Lyon, to serve you as judge on fruits at your State fair, and having accepted it and performed the duties to the best of my ability, I deem it proper to add a few words of comment, supplemental to the report on awards.

Owing to the fact of your exhibition coming so near the time of our State fair, I hesitated in accepting it ; but esteeming it quite an honor to receive such an invitation, coming, as it did, from some of the best pomologists of the country, and affording an opportunity of seeing and testing, under favorable conditions, the famous fruits of Michigan, and of meeting President Lyon, Secretary Garfield and other noted fruit growers of your State, I could not refrain from accepting the invitation ; and accordingly, on the morning of the 14th of September I reported for duty on the fair grounds at Jackson, having previously been furnished with a complimentary ticket, through the kindness and courtesy of President Chamberlain, of the Agricultural Society. While performing the work assigned to me it was my intention to have placed on record, to be printed with the list of awards, the reasons that led to the decisions in awarding the several premiums : but owing to the pressure on me to serve on as many of the various committees as possible, I was unable to do so, and had to leave it to others to attend to, which I trust was properly done.

In reference to the general exhibit of fruit, I can truly say that no better display has come under my observation at any of the State fairs that I have attended, and well may the citizens of Michigan feel proud of the work that the State Horticultural Society is doing for the interests of horticulture : and the Agricultural Society is indeed fortunate in placing this department of their fair under the management of such an efficient organization. From my observation, I know of no agricultural society that has succeeded in making a creditable exhibit of fruit that has not called to its aid the horticulturists of the State.

The systematic arrangement and classification of the fruits, in such manner as to afford instruction to the public and lessen the labors of the judges, was very good ; but one of the most important works of the society, under the leadership of President Lyon, the correcting the nomenclature of the fruits, was very plain to be seen. As far as I was able to judge, I do not remember of ever seeing so large a collection of fruit where there were so few mistakes in naming.

The display of grapes and plums was very fine, showing the adaptation of soil and climate to the growing of these luscious fruits. The collection of seedling grapes grown by Mr. Chidester contained some promising varieties, one of which the committee deemed worthy of special notice, and, with the advice and consent of the originator, it was honored with the name of your worthy President Lyon. We hope it will be given a trial in other States, and prove an acquisition to our list of grapes.

The exhibition from the Agricultural College, by Prof. Bailey, was interesting, especially the seventy varieties of tomatoes raised from seed obtained from the different seedsmen of the country, for the purpose of comparison and detecting fraud. We notice some old varieties with new names.

I was sorry that for lack of time I could not make a more careful examination of the exhibit, and give a more detailed report.

I cannot close these brief remarks without expressing my appreciation of the hearty reception given me, and of the hospitable entertainment, and the courteous, gentlemanly treatment, and the warm fraternal feeling extended to me by all with whom I had the pleasure of becoming acquainted.

Very respectfully,

G. B. BRACKETT.

Denmark, Iowa, November, 1886.

The audience then listened to the reading of a paper from P. C. Reynolds, of New York, entitled

FEWER ACRES OF SMALL FRUIT, MORE FRUIT TO THE ACRE.

Speaking of unremunerative prices for small fruits, he suggested, as a cause, the abandonment of the thorough processes of horticulture proper, and the substitution of the more diffusive and less effective practice of the average agriculture of the country, with the inevitable result of a correspondingly diminished product in both quantity and quality.

A letter was also read from the editor of Orchard and Garden, suggesting that a supply of the commercial demand required not the employment of intensive methods only, but of extensive ones as well, and proposing to escape the exactions of middlemen by the organization of Fruit Growers' Unions.

Thomas L. Brown, of Grand Rapids, followed in advocacy of the intensive system.

S. D. Willard, of New York, remarked upon the profitableness of high manuring.

The session closed with the announcement of the usual committees.

On Wednesday morning, December 1st, at the opening of the session, a committee on nominations was appointed, and on receiving their report the following officers were elected by ballot:

President—T. T. Lyon, South Haven.

Secretary—Charles W. Garfield, Grand Rapids.

Treasurer—S. M. Pearsall, Grand Rapids.

Members of Executive Board—W. K. Gibson, Jackson; H. W. Davis, Lapeer.

ARE MICHIGAN APPLES DETERIORATING?

was the subject of a general and somewhat prolonged discussion. That the question must be answered affirmatively seemed to be universally conceded. While some suggested the increase of insects, or the modification of climate from removal of forests as the cause, the fact was freely admitted that, almost everywhere, the deterioration of the soil was to be acknowledged as the chief cause.

UPON WHAT DOES THE FUTURE SUCCESS OF APPLE GROWING DEPEND?

was the topic of a paper read by J. N. Stearns, of Kalamazoo.

His remarks were confined to commercial apple culture. His leading points were "a judicious selection of varieties," "good cultivation," "protection from insects," "careful selection of the fruit," and "honesty and neatness in handling and packing."

THE PLEASANT ART OF GRAFTING

was the title of a paper read by Charles S. Crandall, of Agricultural College, which considered, quite exhaustively, the necessities and objects of grafting, the circumstances under which it becomes practicable, the history of the art, and something of the methods usually practised.

The Wednesday afternoon session was opened by the reading of a paper from Clarence M. Weed, of Illinois, entitled: "What Illinois has done for Entomology." Speaking of the enactment of a law on March 9th, 1867, providing for the appointment of a State entomologist, and the successive appointments of Benjamin Dane Walsh, Wm. LeBaron, Cyrus Thomas and S. A. Forbes, the present incumbent. The essayist also gave short notices of some of the valuable results consequent upon the labors of such appointees.

Geo. R. Knapp, associate editor of the *American Garden*, furnished a paper which was read to open the discussion of

HOW TO TEACH HORTICULTURE,

setting forth the fact that the knowledge of horticulture derived from text books must necessarily be rendered practical and effective by observation and application in the field.

Messrs. Gibson, Bailey and Ragan argued that something of the principles and practice of horticulture should be taught to children before they go to the Agricultural College, and that the work should commence in our common schools.

Secretary Garfield said the society had tried to get the State superintendent of public instruction to have some requirement of horticultural knowledge made of teachers, but with no effect.

The subject was continued by Professor Daniels, ex-superintendent of Grand Rapids public schools, who read a paper, prepared by Miss Lilly Jones, of Grand Rapids, upon "Horticultural Instruction in Kindergartens."

It would be interesting to be able to quote freely from this valuable paper, if only to illustrate how the idea of personal ownership may be made to encourage and beget habits of care, thought and observation, but space forbids.

Professor W. H. Ragan, of Indiana, secretary of the American Horticultural Society, addressed the audience upon

THE PROGRESS OF COLD WAVES.

By means of a series of charts he illustrated the line of progress of the cold wave of January which reached to Florida and froze the oranges upon the trees, then returned north by way of the Atlantic coast, and passed off through the valley of the St. Lawrence. He showed clearly the wonderful influence of the great lakes upon the climate of Michigan, by the lines of low temperature which curved around our peninsula leaving us exempt from

serious damage. The address was very interesting and was highly appreciated by the audience.

A letter was read from Herbert Myrick, editor of *Farm and Home* of Mass., on

EXPERIMENT STATIONS,

the primary object of which appeared to have been to call attention to what was known as the Hatch bill, at that time pending before Congress, and to urge upon the society the propriety of adopting resolutions urging favorable action thereon, by the members of Congress from Michigan.

Messrs. Miles, Willard and Monroe also urged the desirability of action on the matter.

The first hour of the Wednesday evening session was devoted to a consideration of the merits of the newer fruits. A goodly number of these were considered, after which the secretary read a series of

NOTES ON SOME NEW APPLES,

by T. H. Hoskins, M. D., of Vermont, which have recently attracted attention in the colder regions of the north and northwest, largely on account of their extreme hardiness.

This was followed by a letter on the same subject by J. S. Stickney, vice president of the Wisconsin Horticultural Society, giving an account of a visit to the experimental orchard of A. G. Tuttle of Baraboo, Wisconsin, and of the Russian varieties he saw in fruit there.

Considerable time was given to the discussion of the Jewell strawberry, which was generally agreed to be promising, although another season's trial was deemed advisable.

NOTES ON THE NEWER GRAPES

were then read from Geo. W. Campbell of Ohio, in the course of which Empire State, Niagara, Worden, Pocklington, Brighton, Moore, Hayes, Vergennes, Early Victor, and Jefferson were more or less highly commended, and Ulster and Poughkeepsie Red were mentioned as promising.

Another subject here for a few minutes interrupted the published programme, an account of which is given in the language of the secretary, as follows:

"At this juncture a matter came up not announced upon the programme. Secretary Gartfield, who was seated in front of the audience, beckoned President Lyon as if to engage him in a moment's conversation, and Vice-President Gibson assumed the chair.

Upon turning about the president's attention was attracted by an address from the vice-president that seemed partially directed to him. Mr. Gibson spoke eloquently and with intense feeling of the great work done for Michigan pomology by Mr. Lyon and the reliance the society had always placed in his knowledge of horticulture; how he had given standing abroad to our society when it was yet weak, and of the work he is now doing for the State in writing a history of Michigan's progress in horticulture for fifty years. While Mr. Gibson was speaking Mr. W. N. Cook, a life member of the

society, placed upon an easel a large, well executed crayon portrait of the president, which had, without the knowledge of Mr. Lyon, been ordered by the executive board of the society; and, in honor of his work and influence, will be placed for permanent keeping in the State Capitol at Lansing.

It was, to Mr. Lyon, a complete surprise, and he was so deeply moved that response was impossible, and he quickly resumed his seat, asking to be excused from remarks. Mr. Gibson's tribute was spoken with much feeling, and although he uttered high praise of Mr. Lyon, no member will say he in any respect exceeded what was due."

President Willits, of the State Agricultural College, was now introduced and gave the lecture of the evening on

CULTURE AND HORTICULTURE,

which opened with the remarks: "Language expresses only a portion of our ideas. In a sense all men are tongue-tied. Words suggest, but no more keep pace with the thought than the hand follows the stone propelled by its power. Words, say the dictionaries, are the signs of ideas; but words are visible, oral, material, and as signs, are no more the thing itself than the bill poster is the menagerie behind the canvass."

But to attempt to give the thought and sparkle of the address would be like attempting to paint a sunbeam. Nothing short of its reproduction in full can do this.

Two definitions only are extracted as indicative of leading thoughts:

"Culture is the unwritten law that compels society to do the right thing at the right time, in the right way. Its order is an impulse rather than a law. When it has become a second nature, if by chance it never was first nature, it raises the race from barbarism to civilization—the whole plane of mankind is elevated."

"Horticulture is defined as the most perfect method of tilling the earth so as to produce the best results, whether the products are objects of utility or beauty. It is the acme of agriculture, with more culture in it, of the kind we are discussing, than in agriculture, for the reason that there is more personality in it, more cultivation and a better grade of products. There is but little scope for taste in a farm; they are all of the same type. There are no two gardens alike—there is individuality in them. Whatever calls for taste has culture in it, whether it be a home, a room, a garden, a wrap or a bonnet. Whatever calls for harmony in detail and results, whether in a landscape, a garden, or a garment, has culture in it."

The lecture closed the evening session.

The session of Thursday morning commenced with the reporting of the following by a committee chosen for the purpose:

Resolved, That, in view of the fact that fruit is often handled with undue carelessness by express companies, and by railways, and thereby its value very much depreciated and often ruined, we hereby earnestly urge upon all such companies the necessity of more careful handling of fruit and an honest respect for the property of others.

JOHN SAILOR,
D. W. HINMAN,
GEO. HOSFORD,

Committee.

C. Engle, of Paw Paw, opened the discussion on

PEDIGREE AND PROGRESS IN FRUIT CULTURE

by reading a paper giving an account of his experiments in the origination of varieties of peaches and grapes by reproduction from seed, and selecting from these, and also by artificial cross fertilization. He believed it quite as possible to establish a race of plants as to accomplish such a result with animals.

The subject was discussed at considerable length, branching out in several kindred matters.

A letter from Emil Bauer, of Ann Arbor, on the subject of

FRUIT JUICES AND SYRUPS,

was read by the secretary, giving some account of a jelly manufacturing establishment near Ann Arbor, also of a fruit jar with an air pump, the cover being so constructed that it can be readily opened, a portion of the contents taken out and the remainder effectually resealed.

Robert D. Graham, of Grand Rapids, presented a paper on

FRUIT RETARDING HOUSES,

referring to the establishment of S. W. Dorr, described in the society's volume for 1882, and suggesting the value of such a house for the retarding of the ripening process in the case of the more perishable fruits.

The morning session closed with the reading of a paper on

THE RELATION OF FOODS TO INTELLECTUAL DEVELOPMENT,

by Dr. C. E. Davison, of Wayland.

The session of Thursday afternoon opened with the report of the committee on the recommendations of the President's message:

To the State Horticultural Society:

Your committee recommend that a committee of three be appointed by the chair to take into consideration all matters concerning horticultural legislation, as proposed by the society.

(The chair named W. K. Gibson, Jackson; W. J. Beal, Lansing; and L. D. Watkins, Manchester, as such committee.)

It also recommends that this committee shall especially consider the advisability of exempting timber belts from taxation; shall endeavor to secure the collecting of horticultural statistics by the Secretary of State, and shall recommend legislation to check the ravages of the codling moth, canker worm, curculio, currant worm, and other insects particularly injurious to horticultural interests.

Your committee further recommends that the society renew its efforts toward the ornamentation of school grounds. It recommends the holding of the next summer meeting in the Northern Peninsula, providing the funds of the society will permit.

It recommends that the matter of bringing influence to bear toward securing the appointment of a horticulturist upon the State Board of Agriculture be referred to

the executive board with power to act. To the executive board we would also refer the matter of devising means of increasing our membership.

We would recommend the passage of resolutions urging the passage of the Hatch bill by Congress, and likewise the passage of a bill by our State legislature to place the horticultural department of the Agricultural College upon an equal footing with other departments of the college.

We would refer to the society the suggestion made by President Lyon, that action be taken concerning the destruction of birds for ornamenting women's hats.

Respectfully submitted.

S. L. FULLER,
C. J. MONROE,
L. H. BAILEY, JR.,
Committee.

The report was accepted and adopted.

The standing committee on new fruits, through their chairman, submitted their annual report, which was accepted and ordered printed with annual volume.

The topic for discussion now taken up was that of "Public Parks."

Thos. D. Gilbert opened the discussion upon the "Public Park as a Humanizing Town Attribute," in the consideration of which he was followed by Professor Beal, E. H. Scott, A. A. Crozier, and others.

Professor Jas. Satterlee continued the discussion by reading a paper on "The Park as an Educator," and the subject was pursued farther by Professor Bailey.

The discussion of this subject closed with a paper on "The Utilization of Fair Grounds for Park Purposes," read by H. C. Sherwood, of Watervliet.

The afternoon session closed with a paper on "Espalier Training of Fruit Trees," read by George Taylor, of Kalamazoo.

The closing session on Thursday evening commenced with the report of the committee on sub-tropical fruits, who reported a fine display of oranges, figs, bananas and exotic grapes, by A. J. Brown, of Grand Rapids, and bottled apricots, cherries, limes, oranges and bananas, by Herrick & Randall, of Grand Rapids.

The committee on apples and pears reported a creditable exhibit of these fruits, but prematurely ripened, owing to the peculiarity of the season. Pears were exhibited by Victor E. Middleton, also by S. D. Willard, of New York.

The committee on ornamental plants reported the floral embellishments as unusually good for the occasion. They especially commend the exhibit of chrysanthemums, epiphyllums, lycopodiums and other plants made by Henry Smith. The chrysanthemums especially, show much care in selection and culture. An interesting floral vase, built upon a ground of native fern, is exhibited by J. A. Hovey; and a basket of well grown chrysanthemums, with trimmings of myrsiphyllum and geranium leaves, by Geo. F. Crabb.

The committee on paintings reported three fruit paintings by Flora Ball; one fruit painting by Alice James; one fruit painting without name; one fruit painting on oil silk without name; two flower pieces by Mrs. C. W. Calkins; one large painting of a basket of flowers, by Mrs. E. E. Wilson; two flower and sixteen fruit paintings by Mrs. P. Clement Taber.

The committee to whom were referred the reports of the secretary and

treasurer reported that they had examined and compared the same and find them correct.

The report of the committee respecting the Hatch bill being under consideration, it was unanimously

Resolved, That the Michigan State Horticultural Society, in annual session assembled, desires to express its hearty sympathy with the provisions of the congressional bill for the establishment and support of State experiment stations in the several States of the Union, known as the "Hatch bill," and urge that the horticulturists of Michigan, as individuals and in assembled associations, exert their influence in behalf of its passage.

The following was also adopted by a hearty vote:

Resolved, That the Michigan Horticultural Society urge upon our State Board of Agriculture and State Legislature, in providing for the management and maintenance of our State Agricultural College, to deal with the horticultural department liberally, placing it upon a foundation commensurate with the importance of horticulture among the interests of our State.

The remainder of the session was devoted to a lecture upon "Life on the Farm," by Dr. Manly Miles, of Lansing; in which he dwelt for some time upon the peculiarities and modes as well as the rapid reproduction of the exceedingly minute organisms recently revealed by the improved powers of the microscope, and among which are to be found the sources of so many of the diseases to which both animals and vegetables are subject; especially those of a contagious character.

A short time was devoted to questions upon the subject of the lecture, after which Professor Beal of the committee on resolutions reported the following:

Resolved, That we tender our thanks to the officers and members of the Grand River Valley Horticultural Society, for various courtesies extended, for furnishing the use of this fine hall, with adjoining rooms, and for entertaining us in their homes. We thank the members of the press; the officers of the various railroads leading to Grand Rapids, the proprietors of the Eagle Hotel for reduced rates. We thank Mr. Edwin Willits, president of our Agricultural College, Dr. C. E. Davison, of Wayland, Dr. Manly Miles, of Lansing, for valuable addresses—not forgetting to do the same for those who are not members, whether citizens of our own or of other States, for their valuable papers and discussions. We would not forget to return thanks to Geo. Hosford, of Ionia, for his free lunch of Fameuse apples and Concord grapes. To us this is a new departure, which we feel like encouraging, as it prevents visitors from nibbling at the choice specimens on exhibition. To a few active members who were with the society at its organization, seventeen years ago, the rapid progress of the work in Michigan horticulture is strikingly apparent. The hard missionary work of the members has already borne an abundance of fruit in many parts of our great State.

W. J. BEAL,
E. C. REID,
C. A. SESSIONS,
Committee.

The resolution was adopted by a rising vote, after which the society adjourned *sine die*.

On December 16th, 1886, Honorable Marshall Pinckney Wilder, who had, in September, 1885, at the biennial meeting of the American Pomological

Society, at Grand Rapids, Michigan, been for the twentieth time elected its president, died at his home in Dorchester, Massachusetts, in the eighty-ninth year of his age.

His death leaves a vacancy which can hardly be fully filled. Few men, possessed of the eminent qualifications for the position which, as a horticulturist, he so long and so efficiently filled, are likely to be willing to devote to it the time, the thought and the pecuniary aid which, with an open hand he bestowed upon this, the special offspring of his paternal efforts, for the future prosperity of which he has indicated his anxiety by a bequest to remain as a permanent memento of his care for it while living.

Its friends can hardly fail to await with anxiety the course to be marked out for it in the future, which may, doubtless, be indicated during its next session, to occur at Boston, in September, 1887.

DEDUCTIONS FROM THE STATE CENSUS OF 1884.

The State census of 1884 gives the following totals of horticultural plantations and their products for the entire State:

Apple orchards 312,716 acres, 9,245,419 bearing trees, yielding 4,092,806 bushels in 1883.

Peach orchards 24,502 acres, 1,428,209 bearing trees, yielding 290,091 bushels in 1883.

Total value of orchard products sold and consumed in 1883, \$2,671,161.

Vineyards 3,228 acres; grapes sold in 1883, 1,550,702 pounds; wine made in 1883, 24,685 gallons.

Nurseries 862 acres; value of products sold in 1883, \$134,037.

Market garden products sold in 1883, \$572,216. Estimating the grapes at 3 cents per pound and the wine at 50 cents per gallon the value of the vineyard products will be \$58,863.56, and the total of the horticultural products enumerated in the census will be \$3,436,267.56.

This only includes fruits in orchard and vineyard and market garden products. If to these we add the large small fruit product of the State, with the fruit of various kinds not in orchards or vineyards, and the products of farm and village private gardens the estimate will doubtless considerably exceed the sum of \$5,000,000, at which certain estimates have heretofore placed it.

LAWS OF MICHIGAN PERTAINING TO HORTICULTURE.

The following compilation of the laws of this State bearing upon horticultural subjects was prepared by Secretary C. W. Garfield, of the State Horticultural Society, for the report of 1885, and is inserted here for convenience of reference:

The laws of Michigan which have a direct bearing upon horticulture and forestry are not numerous, but scattered here and there through the statutes, there are provisions that are of considerable interest in this connection. Our agricultural college was the first one established in this country, and ever since a sufficient clearing was made upon the college farm for the purpose, gardens and orchards have been given a good deal of attention. The college has been liberally supported by the State, and the horticultural department has received its full share. Aside from regular legislative appropriations of money to the

college, swamp lands in four townships near the college farm were donated by the State, the proceeds of which were to be used in the maintenance of the school.

Previous to 1871 there was no general law under which fruit growers could organize. But the legislature of this year passed the following bill, and the Michigan State pomological (now horticultural) society was the first to organize under it.

LAW CONCERNING HORTICULTURAL SOCIETIES.

SECTION 1. Any five or more persons, and their successors, that may hereafter associate together for the purpose of promoting the interests of pomology, horticulture, agriculture, and kindred sciences and arts, may become a body corporate by complying with the requirements of this act.

SEC. 2. The persons intending to become a body corporate for the above named purpose, shall publish a notice of their intention to meet for organization three successive weeks in the newspaper published next nearest to the place where such meeting is to be held; said notice to state the object of the meeting, and when and where it will be held, and to be signed by at least three of the persons interested in establishing such organization; said meeting to be open to the public.

SEC. 3. The articles of association adopted at the meeting provided for in the preceding section, shall specify: *First*, The names, officers, and objects of association; *Second*, The limit of property; *Third*, The limit of subscription of members; *Fourth*, The town, city, village, county, district, or extent of the territory in which the operations of the society may be carried on, or to which they are limited.

SEC. 4. The articles of association, duly acknowledged by each stockholder, together with a certificate signed by the secretary, stating the amount of subscription paid in, must be registered in the office where the association is located, in a book kept for that purpose, and a copy of the same must be forwarded to the Secretary of State.

SEC. 5. On complying with the requirements of this act as above specified, the association so organized shall be a body corporate, and shall be capable of buying and selling real estate in the same manner as the agricultural societies; of suing and being sued in any court of this State; may have a common seal, and may alter or amend the same at pleasure; and be subject to the laws of the State applicable to agricultural societies; may make such by-laws and regulations, not inconsistent with its articles or with this act, as may be found desirable to promote the efficiency of the organization: *Provided*, That the by-laws shall not exclude any citizen of Michigan from membership of the association, attending the exhibitions, or participating in its discussions, who shall subscribe and pay to the funds of the society such sum or sums annually, as the by-laws of the association shall prescribe.

SEC. 6. Should a State association for the promotion of pomology, horticulture, agriculture and kindred sciences and arts, be organized under this act, it shall be the duty of the secretary of said State society to make and transmit to the Secretary of State, a report of the transactions of said society, including copies of papers read at its meetings, reports of exhibitions held, and of facts collected by correspondence or otherwise, at the end of the month of December of each year; said report of transactions to be printed in similar form and number of copies as the reports and transactions of the State Board of Agriculture and State Agricultural Society, under the direction of the Secretary of State.

SEC. 7. District or county, town, city, or village associations organized under this

act are hereby required to report through their secretary, in the month of November in each year, to the secretary of the State association, the proceedings of said society during the year, giving a statement of the facts elicited and of the experience gained during the preceding year: such reports from district, county, town, city or village societies to be used as correspondence in compiling the report of the State association provided for in section six.

SEC. 8. Associations incorporated under this act shall, on compliance with the requirements thereof, be entitled to all the immunities, emoluments, and privileges accorded by law to the agricultural societies of this State.

Although no direct appropriation has ever been made to the State Horticultural Society, yet the society has been indirectly aided through the publication of its reports, the distribution of the same being largely in the hands of the society, with the understanding that those who do something in aid of horticulture in Michigan shall be first served. The following is the text of the section under which the reports are printed and distributed:

The secretary of the State Horticultural Society shall make a report annually, similar in character to that of the secretary of the State Board of Agriculture, but covering the subject of horticulture; eight thousand four hundred copies of said report to be printed and bound in like manner as the report of the secretary of the State Board of Agriculture. Six thousand copies shall be placed at the disposal of the State Horticultural Society, which shall be distributed in like manner as the report of the secretary of the State Board of Agriculture, giving preference to horticultural and pomological societies and fruit growers, wherever such may exist within the State, and the remaining copies shall be disposed of in the same manner as the joint documents.

In 1875, 1881, and 1885 appropriations were made, \$1,000 each time, for the purpose of exhibiting Michigan horticultural products at the sessions of the American Pomological Society, and each time quite a large proportion of the appropriation was covered back into the treasury, although the exhibits were in each case more than satisfactory.

In 1881 the legislature adopted the following concurrent resolution:

Resolved (the Senate concurring), That his excellency, the Governor, be and is hereby requested to call the attention of the people of the State to the importance of planting trees for ornament, protection and shade, by naming a day upon which this work shall be given special prominence, to be known and designated as "Arbor Day."

Under this resolution each year, the Governor has by proclamation designated a day to be celebrated as a tree-planting day, and thousands of trees have been planted under the stimulus of this legislative action.

The present highway law of the State contains the following sections concerning the planting of shade and ornamental trees along the highway:

SHADE TREES IN HIGHWAYS.

SECTION 1. Shade trees shall be planted along both sides of the public highways, at the uniform distance, as near as may be, of sixty feet apart, and not less than twenty-three nor more than twenty-five feet from the center line of the highway, but the township board of any township may direct as to the distance which trees may be set from each other or from the outer line of the highway. All trees now growing upon the sides of any highway, and all trees that may be hereafter planted thereon, standing

more than sixty feet apart, shall be preserved, and shall not be injured or removed, unless by direction of the commissioner of highways, and with the consent of the owner of the adjoining land, unless such trees shall interfere with or obstruct the travel on the highway: *Provided*, That the provisions of this chapter, in whole or in part, shall not be deemed mandatory in townships in which the electors may by vote at a township meeting, thus determine.

SEC. 2. Any person planting shade trees along the highway adjacent to property owned or occupied by such person shall be entitled to be credited twenty-five cents upon his highway tax for every tree so planted, but not to exceed in the aggregate twenty-five per cent of such person's highway tax in any one year.

SEC. 3. In road districts where there are not trees planted and growing along the highways to the extent required by the first section of this chapter, the commissioner shall require that at least fifty trees per year be so planted in each district, and shall continue to require the same from year to year, until every highway in his township, where the adjoining lands are cleared, is supplied with shade trees, as contemplated by said first section, but not more than twenty-five per cent of the highway tax shall be appropriated for such purpose in any one district in any one year. The overseer, acting under the direction of the commissioner, may require twenty-five per cent of the highway tax of any person of any year to be paid in money, the same to be applied in planting shade trees along the highway adjoining the property of such person. The overseer shall particularly attend to the planting of such trees, and shall allow no unsuitable tree, nor any tree wanting sufficient roots or vitality, to be planted, and he shall have the charge of and care for the same in the best manner for their growth.

SEC. 7. Any person who shall willfully injure, deface, tear or destroy any shrub planted along the margin of the highway, or purposely left there for shade or ornament, or who shall hitch any horse to any such tree, by means of which the same shall suffer injury, or who shall negligently or carelessly, by any other means, suffer any horse or other beast driven by or for him, or any beast belonging to him and lawfully in the highway, to break down, destroy or injure any tree or shrub not his own, standing for use or ornament in any highway, shall be liable to an action for damages in a sum not less than one nor more than twenty-five dollars for each offense, to be recovered at the suit and for the benefit of the owner or tenant of the land in front of which such tree or shrub stands, or at the suit of the overseer in whose road district such tree or shrub may be situated, for the benefit of the road fund of such district, according as complaint may first be made by one or the other.

The only enactment we have in Michigan akin to the very stringent laws of California concerning insects and diseases which prey upon horticultural products is our

YELLOW S LAW,

which has been modified from time to time, and now reads as follows:

SECTION 1. It shall be unlawful for any person to keep any peach, almond, apricot or nectarine tree infected with the contagious disease known as the yellows, or to offer for sale or shipment, or to sell or ship to others any of the fruit thereof: that both tree and fruit so infected shall be subject to destruction as public nuisances, as hereinafter provided, and no damages shall be awarded in any court in this State for entering upon premises and destroying such diseased trees and fruit, if done in accordance with the

provisions of this act : and it shall be the duty of every person, as soon as he becomes aware of the existence of such disease in any tree or fruit owned by him, to forthwith destroy or cause the same to be destroyed.

SEC. 2. In any township in this State in which such contagious disease exists, or in which there is good reason to believe it exists, or danger may be justly apprehended of its introduction, as soon as such information becomes known to the township board, or any member thereof, it shall be the duty of said board to appoint forthwith three competent freeholders of said township as commissioners, who shall hold office during the pleasure of said board, and such order of appointment and of revocation shall be entered at large upon the township records.

SEC. 3. It shall be the duty of said commissioners, within ten days after appointment as aforesaid, to file their acceptances of the same with the clerk of said township, and said clerk shall be *ex officio* clerk of said board of commissioners, and he shall keep a correct record of the proceedings of said board in a book to be provided for the purpose, and shall file and preserve all papers pertaining to the duties and actions of said commissioners, or either of them, which shall be a part of the records of said township.

SEC. 4. It shall be the duty of the commissioners, or any one of them, upon or without complaint, whenever it comes to their notice that the disease known as yellows exists or is supposed to exist within the limits of their township, to proceed without delay to examine the trees or fruit supposed to be infected, and if the disease is found to exist, a distinguishing mark shall be placed upon the diseased trees, and the owner notified personally, or by a written notice left at his usual place of residence, or, if the owner be a non-resident, by leaving the notice with the person in charge of the trees or fruit, or the person in whose possession said trees or fruit may be. The notice shall contain a simple statement of the facts as found to exist, with an order to effectually remove and destroy, by fire or otherwise, the trees so marked and designated within ten days, Sundays excepted, from the date of the service of the notice ; and in case of fruit so infected such notice shall require the person in whose possession or control it is found to immediately destroy the same or cause it to be done. Said notice and order to be signed by the full board of commissioners.

SEC. 5. Whenever any person shall refuse or neglect to comply with the order to remove and destroy the trees marked by the commissioners, as aforesaid, it shall become the duty of the commissioners to cause said trees to be removed and destroyed forthwith, employing all necessary aid for that purpose, the expense for such removal and destruction of trees to be a charge against the township ; and for the purpose of said removal and destruction the said commissioners, their agents and workmen shall have the right and power to enter upon any and all premises within their township.

SEC. 6. If any owner neglects to remove and destroy, or cause to be removed and destroyed, as aforesaid, such diseased trees or fruit after such examination and notification, and within the time hereinbefore specified, such person shall be deemed guilty of a misdemeanor, and punished by fine not exceeding one hundred dollars, or by imprisonment in the county jail not exceeding three months, or both, in the discretion of the court : and any justice of the peace of the township where such fruit is sold, shipped or disposed of, as aforesaid, shall have jurisdiction thereof.

SEC. 7. The commissioners shall be allowed for services, under this act, two dollars for each full day and one dollar for each half day, and their other charges and disbursements, hereunder to be audited, as well as any other charges and disbursements under this act, by the township board, all of which costs, charges, expenses, and dis-

burséments may be recovered by the township from the owner of said diseased fruit, or from the owner of the premises on which said diseased trees stood, in an action of assumpsit.

WEIGHTS AND MEASURES.

A law of 1863 prescribed the following standard weights of horticultural products:

Bushels of beans.....	60 pounds	Bushel of sweet potatoes.....	56 pounds
“ dried apples.....	22 “	“ turnips.....	58 “
“ dried peaches.....	28 “	“ cranberries.....	40 “
“ potatoes.....	60 “	“ dried plums.....	28 “
“ onions.....	54 “		

In 1867 a bill was passed which said “the half bushel or part thereof shall be the standard measure for fruits customarily sold by heaped measure ; and in measuring said commodities the half bushel or other small measure shall be heaped as high as may be, without special effort or design.”

In 1877 a law passed providing that the standard weight of apples should be 48 pounds for a bushel.

In 1871 a bill passed providing that the quantity known as a barrel of fruit, roots, or vegetables shall be that quantity contained in a barrel made from staves twenty-seven inches in length, and each head sixteen and one-half inches in diameter, or ordinary flour-barrel size.

In 1869 a special act concerning trespass on cranberry marshes was passed, which prescribed severe penalties for injuring vines or fruit upon these plantations.

In 1877 a law was passed which entailed severe penalties upon persons found guilty of destroying timber, fruit trees, or other plants upon the premises of another, and for entering the garden of another with intent to injure or destroy any of the growing products therein.

In 1869 a penalty was prescribed for entering a vineyard against the will of the owner during the months of August, September, and October, and eat or carry away any of the fruit growing thereon.

DESTRUCTION OF NOXIOUS WEEDS.

The following provision in the highway laws of 1881 is interesting to horticulturists :

Every overseer shall cause the noxious weeds within the limits of the highways within his district to be cut down and destroyed twice in each year, once before the first day of July, and again before the first day of September, and the requisite labor shall be considered highway work ; and once in every month, from the first day of April to the first day of December, shall cause all the loose stones lying on the beaten track of every road within his district to be removed. Any overseer who shall refuse or neglect to perform the duties required by this section shall be liable to a penalty of twenty-five dollars.

One section of the bird law has to do with horticulture. It reads as follows :

Any person who shall at any time, within this State, kill any robin, night-hawk,

whippoorwill, finch, thrush, lark, sparrow, cherry bird, swallow, yellow bird, blue bird, brown thrasher, wren, martin, oriole, woodpecker, bobolink, or any song bird, or rob the nests of such birds, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined five dollars for each bird so killed, and for each nest so robbed, or confined in the county jail for ten days, or both such fine and imprisonment in the discretion of the court.

MONTHLY CROP REPORTS.

One of the most useful laws in Michigan, as affecting horticulture, is the one which provides for monthly crop reports. The following is the full text of the law :

SECTION 1. The Secretary of State shall each year obtain monthly statements as to the condition of live stock, condition and prospects of the growing crops, and as soon after the harvests as possible, statements as to the yield of wheat and other farm and fruit products ; he shall also ascertain the quantity of wheat, wool, apples, and other products marketed, and the quantity remaining in farmers' hands. And the said Secretary of State shall prepare a monthly abstract of the information thus obtained and shall insert therein the number of townships from which reports have been received and shall publish a sufficient number of copies of the same to furnish one copy to each newspaper published in this State, one copy to each member of the legislature, one copy to each correspondent furnishing information for said abstract, and one thousand copies for general distribution.

SEC. 2. That it shall be the duty of the Secretary of State, as soon as practicable after the passage of this act, to select not less than one person in each township who shall be willing to act as correspondent of the department and furnish the information required by the first section of this act, and such further information as shall be deemed useful. And such person shall thereafter, as long as he shall faithfully perform the duties of a correspondent, be entitled to one copy of each of the reports published by the State department relating to agricultural subjects, also to one copy of each of the annual reports of the State Board of Agriculture and of the State Horticultural Society.

THE STATE AGRICULTURAL SOCIETY.

Although the State Agricultural Society has only recognized horticulture as a branch of agriculture, the fact that it has always accorded it a prominent place in its annual exhibitions, and that it has, in so doing, contributed greatly to the enhancement of this interest in the State, may be considered as a warrant for a notice of its organization and doings in these pages.

As early as 1833, a movement in favor of a Territorial Agricultural Society eventuated in the passage of an act by the Legislative Council, on the 20th of April of that year, providing for the organization of such a society.

It does not appear that any proceedings were had under this act; but six years later appears the following account of what was doubtless the first attempt to hold a State fair in Michigan; which was contributed by Henry Raymond, of Bay City, to the Detroit Post and Tribune of August 9th, 1879:

"Your issues of the 4th and 5th insts., contain allusions to a State Agricultural and Horticultural exhibition, held at the village of Ann Arbor, in 1839; and you seem to have doubts that such an exhibition was held. Let me come to the rescue, from entire oblivion, of that illustrious institution: particularly as I had the honor to be one of its members, and perhaps, the only one now living; and then nearly the only live one."

"As stated in your article, an advertisement was published in one or more Detroit papers, and some other papers in the State, saying that on the 1st of October, 1839, (an official announcement,) there would be a State fair held at Ann Arbor. At that time I owned a farm on Grosse Isle, which farm was, later, known as the Fox place, and was trying to introduce blooded stock, sheep and cattle, from a Holderness bull and some Leicestershire sheep of both sexes, imported by George Hentig, then of Grosse Isle. I had succeeded in raising some very fair specimens of half-bloods, and was naturally desirous of contending for the premiums offered by this State institution. I therefore gathered up about twenty head of my best animals, both cattle and sheep, and on the appointed day put in an appearance; I cannot say on the fair grounds, for there were no grounds designated as such. No preparation whatever had been made, no officers of the institution could be found, and not half a dozen citizens there had heard that such a fair was to be held."

"Well, I was bound, after driving my stock thirty miles, to have a show; and found a centrally located vacant lot, put on my stock and commenced holding the State fair, and soon drew quite a respectable crowd. About one P. M., a farmer from Plymouth (a very nice man I found him to be) put in an appearance, with specimens of cheese and butter, and that constituted the exhibition of the Agricultural and Horticultural fair of the State of Michigan for the year 1839."

"So Mr. Tibbitts (doubtless the late John Tibbitts, Esq., the earliest settler in Plymouth—author) and myself walked off with all the awards of premiums, or rather were entitled to those offered by the institution, consisting of silver sets, silver goblets,

silver cups, spoons, etc., etc. But where, O where were they? Echo has not yet answered."

"Well, on returning home from the State show, I addressed the president of the society, the Hon John Biddle, then residing in Detroit, asking what was loose; and why no officials of the association appeared at Ann Arbor. He very politely and regretfully informed me that the whole thing had entirely escaped his memory until the day after the fair."

"I ought to state that quite a number of the good people of the town and village gathered around and voted thanks to the exhibitors; and I have to this day felt proud of that State fair."

In February, 1849, during the first session of the Legislature after the removal of the state capital from Detroit to Lansing, Titus Dort, then a member from Dearborn, Wayne county, and chairman of the committee on agriculture, after conferring with other members, caused a call to be issued for a meeting in Representative hall, on the 10th of March, 1849. After adjourning from time to time, a society was organized, on the evening of March 23d, 1849, with Epaphroditus Ransom, of Kalamazoo, as president; J. C. Holmes, of Detroit, as secretary, and John J. Adam, of Adrian, as treasurer.

Subsequently the Legislature passed an act incorporating the society, on April 2d, and by act approved March 31st, 1849, pledged the sum of \$500 to be offered in premiums, conditioned upon the raising of an equal sum by the society. It also provided for the publication of the society's transactions.

The first fair of the new society was held at Detroit on Wednesday, Thursday and Friday, the 25th, 26th and 27th of September, 1849, with a premium list of \$1,000, on a parcel of ground fronting three hundred and seventy feet on Woodward avenue and extending back eight hundred feet.

The appreciation in which horticulture was already held is manifest in the elaborate provisions made at this and many of the earlier fairs for the accommodation of its exhibits. The capacious halls provided for this purpose were, on many occasions, elaborately ornamented with evergreens at large expense of tasteful labor, making them almost, if not altogether, as attractive of themselves as were the then large, beautiful and perfect fruits, guiltless of the attacks of insect and fungus, supplied by the young orchards of the State, yet in their pristine health and vigor.

This diminutive exhibition, as compared with many of its more modern successors, proved highly successful, even as a financial venture, leaving in the treasury, after paying all liabilities, the sum of \$1,260.00.

During the year 1850 measures were taken by the society for the collection of an agricultural library and museum.

In January of this year the executive committee memorialized the Legislature in favor of establishment of a Michigan State Agricultural College, in pursuance of the provision of the State constitution to that effect, and by joint resolution the Legislature to donate 350,000 acres of land in aid of such undertaking, which was subsequently done by a law extending similar aid to each State and territory.

The agricultural society's second annual fair was held at Ann Arbor on the 25th-27th of September, 1850, with a premium list increased to \$2,000, and an appropriation of \$500 for diplomas and medals. The weather dur-

ing this year's exhibition proved more or less unfavorable, and possibly from this cause, in part, the fact of the necessity to draw upon the surplus of the previous year for expenses is to be explained.

Whatever may have been the reason, the society returned to Detroit for its third annual fair, which occurred at that city on September 24th-26th, 1851, with its premium list reduced to \$2,000. From this time to and including the year 1862, the society's annual fairs were held continuously at Detroit.

The original secretary—J. C. Holmes—continued in that position till the close of 1857, when he withdrew to accept a position in connection with the State Agricultural College. Jed. P. C. Emmons was elected to succeed him, but he resigned during the year, and R. F. Johnstone, editor of *Michigan Farmer*, was appointed for the remainder of the year. He was elected to the position at the next regular meeting, and retained it without intermission down to the close of the year 1874.

By act of the legislature the executive committee had been charged with the duty of selecting the Agricultural College farm, which duty was performed on June 16th, 1855.

The society appointed T. T. Lyon, of Plymouth; S. O. Knapp, of Jackson, and J. C. Holmes, of Detroit, as delegates to the session of the American Pomological Society, to be held at New York, in September, 1858, of whom the first two were in attendance. In 1860 T. T. Lyon was again its representative to the meeting of that society at Philadelphia, and again in 1862 at Boston. At the last two meetings he exhibited fine and extensive collections of fruit from his trial orchards at Plymouth, then just in bearing, which attracted much attention.

In 1863 and 1864 the society held its annual fairs at Kalamazoo; in 1865 and 1866, at Adrian, and again in 1867 and 1868, at Detroit.

The society had by this time accumulated a considerable agricultural museum, and by some arrangement with the authorities of the State Normal School at Ypsilanti, became interested in the construction of a museum building upon the school grounds. This community of interest either had been found embarrassing, or seemed likely to become so, and hence a proposal had been made to surrender their interest to the institution. This offer was accepted by the State Board of Education, coupled with the requirement that the society appropriate the farther sum of \$1,250 toward the completion of the still unfinished building, which was conceded and the transfer consummated during the succeeding year. The accumulated library is understood to have been donated to the Agricultural College.

In 1869 and 1870 the annual fairs were held at Jackson; and again in 1871 and 1872 at Kalamazoo. The last occurred during the same week as that of the Western Michigan Agricultural and Industrial Society, at Grand Rapids. This circumstance occasioned a strong rivalry between the two exhibitions, the friends of each claiming superiority. The result was a coalition of the two, the name and organization of the State Agricultural Society being retained and the annual fair for 1873 going to Grand Rapids.

At the annual meeting of the executive committee of the State Agricultural Society in January, 1873, an arrangement was effected by which the entire management and control of the exhibit of flowers, plants and fruits was placed in the hands of the State Pomological Society, which was authorized to draw on the treasurer of the Agricultural Society for not to exceed \$1,000 in premiums, with the addition of \$1,500 for expenses. This arrange-

ment, by its terms, continued only during that year; but it has proved so far satisfactory to both societies that, with occasional modifications, it has been renewed from year to year till the present time.

C. F. Kimball held the position of secretary for the years 1875 and 1876. The annual fairs of 1874 and 1875 were held at East Saginaw, and those of 1876 and 1877 at Jackson. During the latter year J. P. Thompson, formerly of the State Pomological Society, held the position as secretary.

In 1878, 1879 and 1880 the annual fairs were again held at Detroit. R. F. Johnstone was elected secretary in 1878, which position he retained till his death, which occurred very suddenly, October 24th, 1880. J. C. Sterling was appointed to fill the vacancy, and was regularly elected at the next election. He has filled the position continuously till the present time.

In 1881 and 1882 the annual fairs were again held at Jackson; in 1883 for a single year at Detroit; in 1884 and 1885 the society again exhibited at Kalamazoo; returning, in 1886, to Jackson.

The last three fairs have been held at a financial loss to the society; the last one, at Jackson, probably proving such as the result of almost continuous stormy weather.

As early as the year 1868 the large expense, together with the great waste of labor and material, consequent upon the society's practice of itinerating the annual State fairs, involving the removal of material and the reconstruction of buildings and other fixtures, had directed the attention of its managers to the propriety of providing for their permanent location at some convenient and central point, and the construction of permanent buildings and other fixtures for their accommodation.

This movement had acquired so much strength that during the past year a committee has had the matter in charge, with authority to receive and consider proposals looking to this end. Such proposals are reputed to have been received from parties at Detroit, Jackson, Lansing, Grand Rapids, and perhaps others; but none of these have been found so far satisfactory as to receive the approval and recommendation of the committee.

From its inception the State Agricultural Society has steadily stood as the patron of horticulture, and much of the prominence and high reputation acquired by the latter in our State, may reasonably be placed to its credit. Still, with all the wisdom and wide experience embodied in its official board, so far as agriculture is concerned, there were ever certain deficiencies which only horticultural experience could supply.

In the earlier exhibitions of the society, while taste and labor were expended almost without stint, in the ornamentation of Horticultural Hall, the efforts of exhibitors were largely directed to the accumulation and display of the largest possible specimens of fruits, with no reference whatever to their real value, while the names attached, if names there were, were brought to no test but left to the fancy of the exhibitor. Indeed, in those days it was not unusual to put upon the tables an extensive collection entirely without names, depending upon other exhibitors and chance visitors to supply these from time to time during the continuance of the exhibit. It may naturally be supposed that the effect of such practice would be to encourage the planting of many showy but worthless fruits and to beget a carelessness in the employment of names highly embarrassing to those who might wish to choose wisely and carefully for their own planting.

Something like this was the condition of the pomology of the State at large

when, in 1873, it was arranged that the State Pomological Society should assume control of the horticultural department of the State fair, with the power to devise a list of premiums as well as the rules to govern exhibitors and committees.

Much had certainly been done by individuals, prior to this, to reform these vicious practices, by correcting errors and urging the value and importance of more care in selections for planting, but it was not till the award of premiums was conditioned upon correct nomenclature, and carefully devised rules rendered imperfect, or showy but worthless varieties detrimental to collections, rather than otherwise, that the importance of some knowledge of correct ideas in matters connected with the orchard and garden was fully brought down to the apprehension of exhibitors generally, and the necessity of at least a little acquaintance with pomology came to be very generally comprehended.

To the facts above stated is largely due the reputation of Michigan fruit culture abroad—a reputation resulting from the untiring efforts of comparatively a few men who, largely through the State Horticultural Society, have voluntarily, and without compensation, given their thoughts and their energies to the development and elevation of this special capability of our State—a work, to the success of which the agricultural society has largely contributed by opening to the horticultural society a field susceptible of being far more broadly and effectively worked, from the mere circumstance of its association with the broader field of agriculture.

This affiliation of the two societies has continued, already, for thirteen years, with increasing confidence and cordiality between them, and there would seem to be reason for hope that nothing may occur to mar or diminish such confidence in the future.

THE MICHIGAN FARMER.

This publication has so long been an integer in both the agricultural and horticultural history of the State, that neither can be regarded as complete without some notice of the other.

For many of the earlier events in such history the facts are drawn from a paper prepared by J. C. Holmes, of Detroit.

The Western Farmer was published at Detroit, its first number appearing under the editorial charge of Josiah Snow, on January 20th, 1841, to be issued semi-monthly. On October 15th of the same year the editorship passed into the hands of Bela Hubbard.

On March 15th, 1842, William Harsha became editor, publisher, and printer.

On the 15th of February, 1843, the paper was issued at Jackson, Mich., by D. D. T. Moore (subsequently the originator of Moore's Rural New Yorker, at Rochester, N. Y.) as editor and publisher, under the title of the Michigan Farmer and Western Agriculturist, semi-monthly. Its first volume under this title closed February 1st, 1844.

With the commencement of the second volume, on February 15th, 1844, it appears as Michigan Farmer and Western Horticulturist.

Mr. Moore's connection with the paper closed with the issue of November 1st, 1844, he having transferred it to Wilbur F. Storey and R. S. Cheney, who gave notice that it would become a monthly after the close of the current volume, and take the duodecimo form. In the twenty-first number of this volume the name of Henry Hurlbut appears as editor, and in the last number of volume two his name appears as proprietor also, the title being simplified to Michigan Farmer.

Volume three commenced in April, 1845, and volume four in April, 1846, still at Jackson. At the close of this volume the office of publication was transferred to Detroit.

Volume five, number one, was issued at Detroit, April, 1847, entitled, The Michigan Farmer: Devoted to Agriculture, Horticulture, and Domestic and Rural Affairs. Number eleven of this volume announces the sale of the paper to Warren Isham. The twelve numbers of this volume appear to have been issued within the year 1847, since the first number of volume six appeared as a semi-monthly on January 1st, 1848, with Warren Isham as editor and proprietor.

Number one, volume seven, appears January 1st, 1849, with Warren Isham as editor and proprietor, and J. C. Holmes, horticultural editor, from which position, however, he withdraws after November of that year.

With the first number of volume eight, January 1st, 1850, the paper again becomes monthly, and this from an arrangement continues through volume nine, 1850, and volume ten, 1852, except that Mr. Isham started in May, 1851, on a trip to Europe, leaving Charles Betts (of Burr Oak, St.

Joseph county) in the editorial chair until his return on September 24th, 1852.

Volume eleven commenced with the year 1853, with the name of S. B. Noble at the head of the horticultural department. In the following May Robert F. Johnstone and William S. Duncklee appear as purchasers of the paper, and Mr. Johnstone and Mr. Isham as associate editors, with Mr. Noble still in charge of horticulture.

Volume twelve, 1854, was conducted by R. F. Johnstone, as editor, Warren Isham, corresponding editor, and S. B. Noble, horticultural editor.

The thirteenth volume, 1855, commenced with increased editorial strength, R. F. Johnstone being still editor, with S. B. Noble and Charles Betts as associates, and J. C. Holmes, horticultural editor.

During this year the experimental orchards of T. T. Lyon, at Plymouth, Wayne county, were coming into bearing, and in the October following he commenced to contribute monthly notices of fruits in bearing on his grounds to the columns of the Farmer.

The fourteenth volume, 1856, commences with R. F. Johnstone, editor, Charles Betts, associate, and S. B. Noble in charge of horticulture; but Mr. Holmes retires after the January issue, and Mr. Betts after that of February, giving place to Mrs. L. B. Adams, who takes editorial charge of the ladies' department, the title of which is changed to *The Household*.

In 1857, volume fifteen, Mr. Johnstone remained editor, with Mrs. Adams editor of *The Household*. Mr. Lyon continues his monthly contributions, and in addition to these, he, in October and November of this year, became engaged in a controversy with B. Hathaway on the subject of "Standards vs. Rootgrafts," which was continued through the columns of the Farmer till August, 1858. The chief question at issue was respecting the advantage, if any, to be derived from the use of strong, hardy rootgrafts, with the point of union set well below the surface on which to topgraft tender and weak growing varieties. Whatever may have been the merit of the opposing arguments in the discussion, the fact will hardly be questioned that this mode of propagating weak and tender varieties, and even those of irregular or straggling growth, has more recently been growing in favor with both nurserymen and orchardists.

In 1858 volume sixteen was published monthly under the same managers.

At the beginning of the year 1859 a new series in quarto form was commenced, with weekly issues. R. F. Johnstone, although nominally the editor in chief, had been chosen general superintendent of agriculture at the Agricultural College, and was therefore absent at Lansing in attendance at the institution during the school year, leaving the management of the Farmer largely in the hands of his associate, Mrs. Adams. Weekly contributions were also supplied by T. T. Lyon during this and the following year, as had been the case monthly for the earlier volumes.

The connection of Mr. Johnstone with the college closed with the year 1859, after which his active connection with the Farmer was renewed.

This condition of things continued through the year 1860, and down to the 21st of September, 1861, when, doubtless from causes resulting from the war of the rebellion, the paper was turned over to Wm. M. Doty, who assumed the role of editor and publisher, with Mr. Johnstone and Mrs. Adams as assistant editors. Mrs. Adams soon after became a clerk in the agricultural department at Washington. She was also appointed to a position in connection

with the Washington hospital for sick and wounded soldiers. She died at that city during the year 1872.

The paper soon changed hands again, passing to the control of Bond and Syder, by whom it was again sold to H. N. F. Lewis, who changed the name to *Western Rural*, publishing it at both Detroit and Chicago. In 1867 the Detroit office was discontinued. After its removal to Chicago and publication there for some time, it was sold at forced sale. The death of Mr. Lewis occurred not very long thereafter.

The old enterprise having been thus brought to a close, a new publication made its appearance at Detroit on May 15th, 1869, entitled, *Michigan Farmer and State Journal of Agriculture*, with R. F. Johnstone editor and Johnstone & Gibbons publishers. It was published weekly. The first volume was closed at the close of the year and the second made to commence with the year. These arrangements continued with no essential modifications down to 1873, when a disastrous fire destroyed the Tribune building in which the office of the *Farmer* was located, sweeping away every vestige of the latter. Its publication was resumed after a suspension of three weeks.

It appeared regularly without noteworthy change until the death of R. F. Johnstone, which occurred very suddenly on October 24th, 1880. Mrs. Johnstone, however, continued the enterprise as administrator till, more recently, Gibbons Brothers appear as publishers; and, since no editor's name appears, they are supposed to be the editors also. At this date (1887) the paper appears to have become firmly established.

It has, from its commencement, maintained a horticultural department only for occasional brief periods, however, with a horticulturist as its ostensible head. Mr. Johnstone, early in life, was a compositor on the *Horticulturist*, one of the earliest horticultural serials published on this continent, under the editorial charge of the elder Downing, where he doubtless acquired valuable experience in the management of such a department; and, beyond doubt, under his supervision, this department has effected much good to the horticulture of the State. Indeed there is room for doubt whether in the earlier stages of Michigan horticulture there would have been sufficient warrant for larger expenditures in this direction. Even before Mr. Johnstone's death there was, not unfrequently, an obvious lack of discrimination in the selection of horticultural matter; while since that event the matter given has still more frequently been such as to occasion serious complaints in horticultural quarters. It hardly need be remarked that cases are of frequent occurrence in which only an expert in horticulture can properly select and determine the propriety of matter offered for insertion. There is much occasion for the belief that the short comings of the paper in this particular may have occasioned the withholding of very many subscriptions by the horticulturists of this and other States.

THE AGRICULTURAL COLLEGE.

The State Constitution, Article 13, Section 11, provides that "The Legislature shall encourage the promotion of intellectual, scientific and agricultural improvement, and shall, as soon as practicable, provide for the establishment of an agricultural school."

The executive committee of the State Agricultural Society at its annual meeting in December, 1852, memorialized the Legislature, asking the passage of a law for the establishment of an agricultural school in connection with the experimental farm. The memorial was favorably received, but failed to elicit any action on the part of the Legislature.

The cause of this non-action on the part of the Legislature may be inferred from the fact that very soon after the presentation of the memorial, the regents of the University provided for giving, at that institution, a course of free lectures upon agricultural science, and the appointment of Rev. Charles Fox, professor of theoretical and practical agriculture, with the expressed purpose to make such lectures and professorship a permanent feature of the University.

At the session of the legislature held in 1855, a law was passed and approved by the governor on February 12th providing for the selection and purchase of a farm and the organization of the proposed college.

By the provisions of the law, the executive committee of the State Agricultural Society were charged with the duty of determining the location of the college farm, which by the terms of the law, was to be within eight miles of the State capitol at Lansing. The location was determined on the 16th of June, 1885.

The location selected includes six hundred and seventy-six acres of land.

The law as originally enacted placed the college under the control of the State Board of Education, who proceeded to construct such buildings as were deemed immediately necessary, and the institution was opened in May, 1857, with J. R. Williams as president and J. C. Holmes, so long secretary of the State Agricultural Society, as secretary and professor of horticulture.

There were doubts expressed in many quarters respecting the propriety of placing the management of an agricultural institution in the hands of a board having no direct affiliation with the class for whose more immediate benefit it had been provided; at the same time imposing an enormous burden upon a board whose previous duties fully engrossed their time and energies.

So obvious had this difficulty already become that in their report respecting the college it was recommended that a Board of Agriculture be created, and that the college and farm be placed under its supervision. This change was accordingly effected in 1861.

President Williams very soon retired from that position, and, pending the selection of his successor, Professor Fiske of the chair of chemistry performed

the duties of the office. In the autumn of 1862 T. C. Abbot was chosen to the presidency of the institution.

J. C. Holmes held the position of professor of horticulture but a short time, and upon his retirement he also vacated the office of secretary, which position was temporarily filled till the appointment of Sanford Howard to that position in February, 1864.

In 1861 the Legislature enacted an amendatory law providing for transferring the control of the college to a Board of Agriculture, and pending its enactment a joint resolution was passed postponing the opening of the college till March 20. David Carpenter of Lenawee county, Justus Gage of Cass, Philo Parsons of Wayne, H. G. Wells of Kalamazoo, Silas A. Yerkes of Kent, and Charles Rich of Lapeer were named in the act as the first members of the board.

Prior to the spring of 1869 the practice prevailed of conferring the presidency of the board upon the governor, who is, *ex-officio*, a member; but from this time forward the practice was changed, and Judge Hezekiah G. Wells was elected to the position, which he held continuously till his retirement from the board in 1883, in consequence of age and infirmity.

In July, 1833, an act of Congress donated to each State and Territory thirty thousand acres of land for each of its senators and representatives in Congress, as an endowment for one or more agricultural colleges in each. Under this act Michigan has received 235,673.37 acres.

The selection and sale of these lands was committed to the State land office, and the State became sponsor for the payment of interest upon the amount actually sold, at the rate of seven per centum per annum, the principal remaining in the hands of the State as a perpetual endowment fund.

The college ornamental grounds and greenhouse were entered in 1875 in competition for the award of the orchard committee of the State Pomological Society. The committee's report contains so full a description of these that it is given entire:—

The ornamental grounds, with which alone we had to do, contain the college buildings, dwellings of the faculty, greenhouse, and apiary, extending over about sixty acres. The soil is very sandy in spots, but its general character is heavy clay, necessitating underdraining. The surface is quite rolling, requiring considerable grading in places to maintain the polished surface admired in grounds so limited and devoted entirely to the frequented walks and drives of a public institution.

Along the southern and southwestern boundary flows the Red Cedar river, having in its greater part steep banks deeply draped with a very large variety of native trees, shrubs and vines. Much of this native vesture remains in its wild beauty; and here may be found, of trees, within a short walk, three species of poplar, three of ash, also ironwood, silver-leaf maple, red-leaf maple, sugar maple, sycamore, black walnut, five species of oak, two of wild cherry, three of elm; also whitewood, white pine, beech, basswood, Kentucky coffee, pepperidge, hackberry, mulberry, sassafras, hickory and butternut. The shrubbery includes the hop tree, bladder nut, wild plum, prickly ash, stag-horn, sumach, wahoo, two species of spireas, two of wild rose, three of hawthorn; also serviceberry, witch hazel, wild gooseberry, wild currant, elder, viburnum, button bush, huckleberry, blueberry, spicebush, hazelnut, blue beech, six varieties of willow and four of dogwood.

Among the vines we notice wild grapes, green-briars, wild cucumber, moon-

seed, wild yam, American ivy, climbing bittersweet, dodder, wild bean, ground nut and poison ivy. In addition, wild flowers, grasses and sedges abound in great variety; thus affording to the students of the institution a rich field for botanizing along the banks of this lovely stream.

The grounds distant from the river are ornamented with trees, native and transplanted, of many kinds, and but little different from those already mentioned. Several specimens of oaks are majestic, and give character to the grounds, while some of the whitewoods are indeed admirable; particularly one standing by the well, near the main college building. Among the more rare or ornamental trees and shrubs we noticed the ginkgo, cut-leaved weeping birch, cut-leaved weeping alder, rhododendrons, Siberian and Tom Thumb arbor vitae, variegated ash and purple beech.

The residences of Profs. Beal and Fairchild present a cozy and homelike appearance, that we would rejoice to see imitated in other parts of Michigan, by having trained over their fronts the American ivy. Prof. Fairchild succeeds, upon a brick wall, in making this pretty vine cling closely without artificial support, by simply keeping the loose ends cut. In clearing up the grounds and transplanting, care has been taken to avoid clumps or lines of trees; the groups are agreeably spread and artistically mingled. The trees all seem to be healthy and flourishing, excepting only the white oaks. These in several cases are dying, probably from the effect of severe cold and lack of moisture; as the summers preceding the dreadful winters of recent years, when the mercury sank to -33° , were remarkable for unusual droughts. In this connection an observation by Prof. Beal, founded upon information obtained during the winters of 1872-3 and 1874-5, is recorded as possessing interest to all tree growers, viz.: that -25° with wind is more destructive than -33° without wind.

The plan of the grounds was prepared by Mr. Adam Oliver, a landscape gardener, residing in Kalamazoo. The style is neither geometrical nor picturesque, but mixed. The essentials for perfect landscape gardening—lawn and trees and a gently winding stream—are here amply provided. The bold banks of Cedar river, with its lovely entanglement of native trees and vines gracefully describing the southern limits of the grounds, will necessarily become more and more a particular feature of the landscape, and deserve the careful and studied attention of the gardener. The broad expanse of green lawn, with its swells and depressions and groups of trees, through which thread circling walks and drives, will be the second and remaining feature.

So far the work has been well done, but the grounds are yet far from the finish they are capable of receiving and which they deserve. With the exception of a handsome rustic bridge, designed by Prof. Beal, that leads across a slight ravine from the college southward, and a large boulder put in place in the college front, and properly inscribed by the class of 1873, to mark their labors and triumphs, the grounds are without embellishment of a purely artificial character. The same economy in the expenditure of public money that is so praiseworthy a feature of public administration in Michigan, has obtained here, and the material supplied by nature has alone been used, but we hope the needful funds will not be withheld to more fully develop the beauties of the place, and make it what Milton pictured Eden—

“A happy rural seat of various views.”

And may we not hope that the spirit of such beautiful surroundings may be-

come so impressed upon the students who may here receive a preparation for intelligent and progressive labors in the field of honored and productive industry, that it will attend them to the enchanting woodlands and lovely lake sides which so proudly distinguish Michigan, and find free scope in the founding of tasteful homes which shall still farther beautify "the land we love."

In attempting an inspection of the greenhouse included in these entries your committee are conscious of their lack of qualification for the purpose, and therefore content themselves with a brief description of the buildings and their contents, mainly derived from the statements of Prof. Beal. The greenhouse was erected in the winter of 1873, and cost about \$8,000. The conservatory is twenty-five by fifty feet, and is ten feet six inches high. The southern wing projects from the middle of the conservatory and is twenty-five by sixty-three feet, divided into a rose house and a small grapery. West of the conservatory is a wooden building in the American Swiss style, about twenty-seven feet square, containing a potting, a gardener's and a waiting room for visitors, and beneath a cellar for the boiler and fuel. Above is a large garret for storing boxes. Two cisterns, each of the capacity of two hundred and seventy barrels, are arched over beneath the surface. The roof is curvelinear, the glass is double, bedded in putty and held in place by zinc nails. No putty is used on the outside, the cracks being filled with a coat of thick paint.

The rooms are heated by a boiler, from the upper part of which passes a flow pipe to all parts of the house. The whole establishment seems to have been constructed with intelligence and care, and yields the satisfaction expected. It is now quite well filled with rare and beautiful plants, worth from 50 cents to \$1.50 each. The greenhouse now contains four thousand plants, to which two thousand will be added by next spring. There are now in the collection a fine variety of acacias, twenty-one of begonias, nine coleus, six dracaenas, fifty-eight geraniums, many ferns, fifty-eight roses, eight selaginellas, seventy-five verbenas, twenty-five fuchsias, seven cacti, four camellias, six azaleas, etc. At present the sales do not equal the outlay in money and labor, for the reason that plants are not sold except when a variety is in excess of probable needs. Enough are always retained for a good show; but the sales now being made indicate that the establishment could be made profitable if managed for that purpose. It has, however, a higher purpose than mere pecuniary profit. Here students in botany floriculture and general horticulture receive practical illustrations in those branches and learn the art of plant propagation. Besides, to many visitors, it is the most attractive and interesting place about the institution, and is calculated to beget a love of plants and flowers both refining and elevating to those who may be thus influenced.

In 1876 arrangements were made for a series of farmers' institutes during the winter, to be conducted by the Board of Agriculture, assisted by the faculty of the college. These occasions have proved highly interesting and profitable, and have obviously done very much to bring the agriculturists of the State at large into fuller sympathy with the institution and its objects. Provision has been made by law for their permanent continuance.

On June 25th, 1878, the officers and executive committee of the State Agricultural Society, the State Grange and the State Pomological Society were invited to visit the Agricultural College as its guests, and to examine

the processes and the conditions of the various departments as they appear at that season.

This invitation was very generally accepted and the occasion proved so far pleasant and profitable that it was renewed from year to year till the year 1884, when it was discontinued.

During the year 1883 James Satterlee, a graduate of the college, was appointed professor of horticulture, but at the close of the following year he retired from the position and Professor L. H. Bailey, jr., was appointed in his stead, who still occupies the position.

The report of Prof. Satterlee of the horticultural department for 1883 furnishes a clew to the kinds of labor required of it, which will be shown by the following extracts:

"The grounds are kept in order by students, and with the great extent of lawn to maintain and the drives and walks to keep in order, it makes a very heavy tax upon the department for labor. The balance against the department is owing largely to this work and to various extra work in clearing up about the halls, drawing away rubbish left from making repairs about the buildings and in putting on new roofs, etc."

The vegetable and small fruit grounds are spoken of as under his charge, after which he states:

"The apple orchard has done very poorly. I have watched it carefully during the season to discover its needs. The trees have made a very small growth, and many of them are suffering from the effects of the cold winters of a number of years ago—being more or less rotten, and some of them dying annually. The fruit has been small and scabby. The whole orchard needs plowing, pruning and fertilizing thoroughly for a series of years to bring it into good condition. Many of the trees are too old and feeble to ever be of any use. If there was any available ground upon the college farm suitable for such a purpose, I would recommend the setting of a new apple orchard. It is certainly needed as a means of illustration.

"The pear orchard has made a very fine growth, and there have been no signs of blight or other disease. Some of the older trees are budded very full for blossoming next year. I fear the early frost may have injured some of the trees, as they were still quite green the 9th of September.

"The Duke and Morello cherries and the plums are doing fairly well, although the birds help themselves liberally to the former and the curculio does an abundant thinning of the latter. The Heart cherries are nearly an entire failure here.

"The vineyard near the observatory has made a good growth, and is ready to bear a good crop of fruit next year. The soil is exceedingly tenacious, however, and in seasons like the present it is impossible to make a good showing. The vineyard upon the terraces near Wells hall has made an excellent growth, and is ready for a large crop of fruit next year. There was a fair crop of fruit in both vineyards the present season, but the killing frost of September 9th destroyed the whole of it. I shall have both vineyards pruned and the vines laid down for the winter."

The reports of Professor W. J. Beal, in charge of the departments of botany and forestry, show a large amount of work done, not only with classes at the college, but also by lectures, addresses, essays, discussions and correspondence, etc., in this and in other States. In his report for 1884 he mentions the receipt of two tubers of *Nelumbium Speciosum*, the sacred lotus of

Egypt, which were suitably planted. He remarks: "This wonderful aquatic plant has produced leaves over two feet in diameter, and delicate pink flowers ten inches in diameter. The flowers are, in shape, much like a tulip, and are very fragrant, often attracting half a dozen or more bees to each flower. Although the plant is from the tropics, it is perfectly hardy in mud which does not freeze, and is much more vigorous and prolific of flowers than our native lotus (*N. luteum-writer*). There is no reason why they should not be introduced into any of our native ponds where the bottom is soft and rich, and where the surface is not too much exposed to strong winds."

Although the zoological department is radically distinct from horticulture, there are few others, some knowledge of which is more essential to success in this.

The report of Prof. A. J. Cook, like that of Prof. Beal, shows a great amount of professional work, both with classes and by lectures, essays, and correspondence, the satisfactory performance of which, unless with expert aid, he finds impossible. Professors Beal and Cook have done a vast amount of gratuitous and highly valuable work for horticulture, not in this State only, but also in other States. Their reputation as scientists has long since come to be national if not even broader still.

Secretary Sanford Howard, of the Board of Agriculture, died at Lansing on March 10th, 1871, having held the position since February, 1864. Robert J. Baird became his successor, continuing in that position till his decease, which occurred in 1885. He was succeeded by the present incumbent, Henry G. Reynolds, of Grand Traverse.

With his annual report for the year 1884, President Abbot tendered his resignation of the presidency of the college, retaining only his professorship. The position was thereupon tendered to Hon. Edwin Willits, of Monroe, formerly a member of Congress from this State, and more recently principal of the State Normal School at Ypsilanti, who accepted and entered upon his duties on July 1st, 1885.

The sympathies of the horticulturists with the idea and plan of a Michigan agricultural college have ever been more decided than have those of the great body of agriculturists; notwithstanding the fact that its practice has not been altogether commensurate with what they have generally deemed to be reasonable expectations. That this has been the case is doubtless, at least in part, due to the unfavorable character of the farm, on which there is alleged to be very little land suited to general orchard purposes. Beyond this, however, the fact seems obvious, that the authorities who were influential in the location of the orchard, together with the selection of trees for the same, could have had little acquaintance with, or interest in, such matters, since the ground chosen is notoriously unfit for such purpose, at least until thoroughly and deeply underdrained; while the trees, instead of having been grown upon the place, as a means of education, are reported to have been purchased, without name, of "tree peddlers."

The plea has been entered that the legislative appropriations were inadequate; but such plea is untenable, since the cost of the few seedling stocks or fruit tree seeds requisite for such purpose would have been far less than that of the trees purchased, while, beyond this, only student labor and the use of a few square feet of ground would have been required, and abundant time would have been allowed for the selection and proper preparation of the orchard grounds.

So far as small fruit and vegetable gardening are concerned, the needs of the institution have insured their cultivation upon a scale adequate to educational needs.

The necessity to maintain the surroundings of the institution in a presentable condition has so far secured the collection, planting and proper management of the indigenous and exotic trees and plants as to fully warrant the favorable report and award of the committee of the State Pomological Society already quoted.

The ornamental grounds are, very properly, placed in charge of the professor of horticulture, who is expected to see that they are properly kept, and that the ornamental devices are in keeping with the general plan. In doing this, the propagation of bedding and other plants becomes needful, if not, in fact, indispensable. The greenhouse, with the requisite facilities for propagation, are understood to be maintained for this purpose, and hence should be under the control of the head of this department. Instead of this they are controlled independently, and the bedding is apparently confined to the more immediate vicinity of the greenhouse, a state of affairs liable, if not likely, to seriously interfere with the departmental plans. Doubtless the alleged fact that this department is not allowed adequate means for its efficient and satisfactory management is fairly chargeable to the excessive economy of a legislature not well informed as to actual conditions, but it may also be inferred that more or less of the difficulty may lie back of even this in a possible lack of sympathy with and appreciation of horticulture by the majority of the members of the Board of Agriculture, since it matters little that an individual member is in sympathy with the needs of this department, and that his ear is open to its calls, so long as his associates cannot be led to comprehend and concede their propriety.

It is believed to be very generally true that the men who arrive at success and notoriety as farmers are quite commonly such as give their undivided and earnest attention to farming in its narrower sense, as not including horticulture, and that such are the persons popularly regarded as representative farmers, and hence the proper persons to constitute a Board of Agriculture. It is not known or claimed that the Michigan Board of Agriculture is thus constituted, and it only need be said that horticulture is a branch of and included in agriculture, and that, therefore, no person should be adjudged fitted for a position upon such a board who is not an adept in both, and therefore qualified to give to each its relative position as well as its proper weight.

HISTORY OF COUNTIES.

MONROE COUNTY.

There seem to be good reasons for the belief that French settlers located at or near the present city of Monroe, very probably for fur-trading purposes, as early as the year 1763.

We quote from a paper read at a meeting of the Michigan State Pomological Society, at its session at the city of Monroe on June 30th, 1874, by Edwin Willits, then a resident of that city, now president of the State Agricultural College, as follows:—

In the three-quarters of a century that had elapsed since the settlement of Detroit, we can easily conceive that these French “voyageurs,” who had coasted the St. Lawrence and Lake Ontario, had carried their canoes around the Niagara, launched them in the waters of Lake Erie, and had followed its shores until the delightful “straits” came to their gladdened sight; we can well imagine, I say, that these hardy “voyageurs” had not failed to explore every nook and outlet of the vast waters their enterprise had made known to the world.

From all accounts, in all their explorations no fairer spot was found than the region we possess this day. They had explored the Raisin Valley. In their canoes they had left their homes on the straits, came down past Grosse Isle, across the head of the lake to Pointe de Peaux (Point of Furs), thence around Pointe de Roches (Stony Point) into a beautiful bay, thence across the bay to the mouth of a river. Ascending the river amid the wild rice for two miles, passing islands of the most luxuriant verdure, crowned with a mantle of grape-vine, they came to where the rich bottom land yielded to high and sloping banks. As they rounded the bend near where the railroad bridge now stands, I can well imagine the beautiful scene before them. For centuries the Indians had made their camp-fires on the banks of the river. At intervals the undergrowth had been destroyed, and the grassy slopes beneath the groves of black walnut, elm and maple were as inviting as the most artistic park designed by the landscape gardener. At intervals the wild, unbroken forest came to the water's edge, and cast the shade of giant trees into the river, and everywhere, in the wildwood, and in the glade, on the river's edge, and as far away under the overarching trees as the eye could see, was a wealth of grape-vines. Everywhere hung clusters of rich purple fruit—everywhere, with a wild luxuriance that far surpassed the stories their fathers had told of the vineyards of sunny France. Within the present century, from a point near the foot of the street on which this building stands, to where the mill-dam has been placed, a man now living walked and climbed the whole distance, over eighty rods, on grape-vines, climbing from tree to tree without touching the ground. No wonder these warm-hearted, enthusiastic “voyageurs,” as they paddled along up the river, cried out “Le raisin! Le raisin!” (the grape, the grape) and that they then named the beautiful river, “La Riviere au Raisin.”

Below this spot, and about where the largest pear trees stand, was a glade of perhaps 100 rods in extent. Across the river, between the two bridges, was another. Lower down, on the north side, on the swell of ground which the railroad bridge bisects, was another. In which of these glades the first party made their camp, tradition has not informed us; but that the party carried back to "the straits," such an account of the beauties of La Riviere au Raisin that other parties covered the sight, I have no doubt. Even "the straits," in the plentitude of their beauty, could scarcely rival this little nook where nature had made a very "Acadie."

No wonder, then, that when the young Navarre, (grandson of Francis Navarre, one of the early settlers of Detroit) at the age of twenty, began to seek a place to build his home, looked with longing eyes to the Raisin, and thought to possess one of the glades on its banks for his dwelling place. The land was then in the possession of the Pottawattomie Indians. From the time when old Francis Navarre was scrivener at the picketed post at "the straits," till his grandson began to put on the garb of manhood, the Navarre family had great influence with the Indians. Negotiations were begun, by which young Navarre was to have the title to all the south bank, from the present position of the mill-dam down to a point below the Canada Southern railroad; and subsequently he had a deed for the most of it, signed by five chiefs. His son, Robert F. Navarre, now (1874) eighty-four years of age, born under the pear trees, is now living two miles nearly south of them, and says his father has repeatedly shown him where the posts stood which marked the boundaries of this Indian purchase.

Here, then, Navarre came in 1780 and built his first cabin on the banks of the stream. Here, then, he planted his pear trees in the same year. He brought seven sprouts, the size of his finger, in his hands on horseback from "the straits." These sprouts came from the two old trees on his father's and grandfather's claim, which were (as I have stated before) sprouts from the old pioneer pear tree, that stood within the pickets, and which may have grown from one of the three seeds brought across the ocean in a Frenchman's vest pocket. From these seven pear trees have descended all, or nearly all, of the French pear trees of the county. Others were obtained at Detroit, but their quality not proving equal to Navarre's, were considered of not much account, and a ready market was found for these at three dollars each sprout.

Of the seven pear trees set out in 1780, three are now (1874) living. Since I settled in Monroe, nineteen years ago, two have died. They died, as many a strong man now dies, suddenly, and without apparent cause. The season before their death, it was estimated that one bore over forty bushels of pears. They have always been prolific bearers, every year laden with their golden harvest. The largest now standing is twelve feet six inches in circumference six inches from the ground; ten feet seven inches one foot from the ground; and at its smallest part ten feet in circumference. Four and one-half feet from the ground the trunk separates into two branches, at which point it is eleven feet one inch around. The two limbs aggregate thirteen feet eight inches. Nine years ago I measured the same tree. At its smallest part it measured nine feet six inches, and the limbs aggregated twelve feet six inches, showing a growth in nine years of six inches girth of the body, and one foot two inches of the limbs. The tallest now standing is sixty-seven feet, or, to be exact, sixty-six feet ten inches in height.

In 1784 a large colony from Detroit settled on the Raisin ; and in time the river for ten or twelve miles was settled, so that as the farms were narrow and the houses built on its banks, it was a continuous village on both sides. Around each house was a pear and apple orchard. It is interesting, in reading over the evidence upon which the United States confirmed the titles to these French settlers, to find the unanimity with which it is testified that a Navarre, a La Salle, a Jerome, or a Robert, settled and occupied their land and planted an orchard before 1796, the date fixed by the act of Congress from which possessory rights were to constitute title. As in the olden time, he that builded a house must needs plant a vineyard, so here, no homestead was complete without its orchard of apples and pears. Vineyards they need not plant, as grapes were indigenous to the soil.

I find that there are four distinct and well marked epochs,—we will not call them generations,—of these apple and pear trees. By a careful examination and measurement of them we can almost place the trees in their appropriate epochs. As in the old Knickerbocker times spoken of by Washington Irving, the good nature and hospitality of the Dutch “vrows” were somewhat commensurate with the amplitude of their waists, and the acumen and profundity of the men were somewhat in proportion to their corporeal magnitude; so the importance and value of these old trees consist largely in what they may measure.

The average measure will nearly indicate the epoch in which they were planted. These epochs were as follows:

First, The year 1780, when the Navarre trees were planted.

Second, The period from 1798 to just before the war of 1812.

Third, The period from just after the war, 1816, to 1820.

Fourth, From 1830 to 1840.

Fifth, From about 1844 down to the present time. But as the last are of the modern grafted kinds, they do not come within the scope of the present article.

THE FIRST EPOCH.

Subsequently, as I have stated before, the pioneers were the Navarre trees. It is true, some had been brought from Detroit prior to 1800, and planted in other orchards, but they had not succeeded. Among them were the trees on the Labadie claim at “La Plaisane,” brought from the Labadie farm adjoining the Navarre homestead at “the straits,” but subsequently, as soon as it was found that the Navarre fruit was preferable, sprouts from the latter were substituted. One singular circumstance is that all these trees came from the sprouts, not from seeds. Whether experience had demonstrated that seed plants were a failure or not, I have not been able to determine. I have learned from Robert F. Navarre that these trees, when young, sent out many sprouts from the roots.

THE SECOND EPOCH.

Among the trees that may be classed in the second epoch, from 1798 to 1810, are those planted in 1798 on the Jacques and Isidore Navarre farms. The pear tree now standing in Mr. Swop's yard, on the Isidore Navarre farm, set out in 1798, measures seven feet and ten inches, and is partially dead but bore eleven bushels of pears year before last. Two trees standing on what was formerly the Jacques Navarre farm, just at the Lake Shore junc-

tion, were set out two years before Jacques, a younger brother of Francis Navarre, erected his cabin. In the chimney of the old house was a stone marked 1800, indicating the year when it was built. This correctly places these trees in the second epoch. They measure seven feet six inches and six feet four inches respectively.

On the Joseph Robert farm, just below the Canada Southern depot, stand six pear trees and four apple trees, set out about 1802. The pear trees measure from five feet six inches to seven feet in circumference. The apple trees measure six feet, seven feet, six feet seven inches, and nine feet two inches respectively.

The Labadie orchard has been substantially destroyed by the encroaching waters of Lake Erie.

THE THIRD EPOCH.

Among the trees planted in the third epoch,—that is, after the war of 1812, on the return of the fugitives to their old homes and the ingress of settlers,—were those now standing in Judge Warner Wing's garden and I. E. Ilgenfritz's lot, just opposite, planted in 1816 by Col. Anderson, who about that time built his store, which is now standing just opposite Judge Wing's residence. These pear trees were brought from the Labadie farm, now submerged. It is supposed the large pear tree in Judge T. E. Wing's yard was planted about the same time, as that at Colonel Anderson's residence after the war; but it may have been planted by him before the war, as he was a resident here at that time. In the same epoch may be classed the large pear trees on the old Downing place. So far as size is concerned, they would indicate an older life, as they measure eight feet four inches and six feet eight inches, but as they were set out by Stephen Downing, it must have been after the war. They have been constant and full bearers. Some eighteen or twenty years ago they seemed to be dying, but by a mere accident were saved, as it is supposed. Mr. Downing's people were in the habit of making ice cream frequently under them, and the salt used in making it was thrown out on the ground; this salt seems to have renewed their life, as they immediately became vigorous. On the Ives place are two pear trees belonging to the same epoch, set out by Jaques La Salle. They measure six feet six inches and six feet four inches respectively. Belonging to the same epoch were the trees set out on the Caldwell farm, some four miles up the river; also the tree in Mrs. Dr. Conant's yard, and the two on the farm of L. La Fountain, Esq.

THE FOURTH EPOCH.

Among those of the fourth epoch is the tree in the Macomb Street House yard, those in the yards of Victor Vincent, Gen. Spalding and many others in different parts of the city. The average size of them is about five and one-half feet in circumference. They are vigorous and prolific bearers. One set out by Thomas Clark, Esq., in 1837, needs particular mention as being a grafted tree. It was procured from Norris Wadsworth, who then owned the Ives place. It was grafted from cions obtained in Connecticut. It bore the next year after it was set out and has borne every year since. It is called the Early Catharine and ripens in early August.

THE OLD APPLE TREES.

I have a few notes not yet disposed of in reference to the old apple trees. On the farm of S. M. Bartlett, Esq., some five miles south of this city, are standing a few old apple trees which, apparently, are of great age. One of their companion trees was blown over by a gale June 9th, 1835. It was sound to the core. It was sawed off about the usual stump height, where it was two feet nine inches in diameter. Mr. Bartlett counted 85 concentric rings, indicating an age at that time of 85 years; hence, at the present time, its companions must be 125 years old. To the question, whether the trees seem to have been set out in orchard fashion, he replied: "No; at least no more than the millers, which were two in a row, but never three." They were manifestly of Indian planting.

On the farm now owned by George Wakefield, some seven miles up the river, is a tree evidently set out some 80 years ago, as the evidence showed that there was an orchard there prior to 1796. It is seven feet eight inches in circumference, with an aggregate of limbs nineteen feet six inches, and has an immense top, being fifty feet in diameter. In 1873 this tree bore thirty-five bushels of apples. It is fifty-two feet high.

In the orchard of B. Dansard, Esq., by the former residence of Gov. McClelland, is an apple tree which is well worth seeing, and whose history is of some moment. It is ten feet in circumference six inches from the ground, and nine feet six inches four feet from the ground. There are four branches which aggregate sixteen feet four inches in circumference. It was set out as early as 1781 or 1782, hence is over ninety years old. Robert F. Navarre well recollects as among his earliest memories, that there were at that place four or five trees, then some nine or ten inches in diameter, and apparently the same size of his father's, which were as old as the Navarre pear trees. This is as sound and as full of life to-day, apparently, as it ever was, and bears from fifteen to twenty-five bushels of fruit every year. In 1841 Gov. McClelland had it grafted, by E. H. Reynolds, Esq., of this place, to Rhode Island Greenings. Mr. Reynolds set some three hundred cions in it. All things considered, it is the most remarkable tree on the Raisin, taking into account its age, vigor, and the remarkable vitality which has enabled it to carry such an amount of grafts in its hale old age. Two years ago Mr. Dansard trimmed off some of the decayed limbs; they cut up into more than a cord of wood.

In the yard of Thomas Clark is an old apple tree, set out by Jacques LaSalle, some sixty years ago. It is supposed that this and its companions were brought from Montreal, but of this I have my doubts, as it is manifest "the straits" had an abundant supply. A companion tree died a few years ago, but the year before its death bore seventy bushels of apples.

In Judge Warner Wing's lot, and also in the lot of B. Dansard, stand several trees set out in 1804 by Dr. Joseph Dozette. They are in prime condition. They range from five feet six inches to six feet eight inches in circumference. Their vigor is all the more wonderful if it be true, as seems to be well authenticated, that the doctor, following a whim as astonishing to the old French settlers as to our modern horticulturists, cut off the roots, made a hole in the ground with a pointed stick, and drove the trees in, insisting that that was the way to set out trees. At any rate he succeeded in making good trees, however he may have set them out. This orchard, including, as it did, the lots now owned by Judge Wing and Messrs. Dansard and

Ilgenfritz, will now show you what is a rare sight, namely, trees of all ages, from nearly one hundred years old down to ten years' growth, all in vigorous health and bearing. You will there see to-day the trees of all the ages and epochs I have spoken of—those of 1780, of 1804, of 1816, of 1830, of 1840, and of the present generation. As one died another one has been substituted.

An apology is scarcely needed for the prolixity of the foregoing extract, since in few, if any, other localities in this State are found such abundant remains of the early fruit plantations of the pioneer "voyageurs" who, during the earliest years of our authentic history, occupied the borders of our lakes and rivers; while, probably, in no other locality has the debris of their early horticultural operations been more carefully and authentically collated.

Wild or Indian rice, sometimes called water oats (*zizania aquatica*), grows abundantly in the shallow waters on either side of the deeper channel of the Raisin, extending perhaps a couple of miles above its mouth, as is indicated in the foregoing extract.

Yellow nelumbo lotus, or water chinquepin (*nelumbium luteum*), a comparatively rare plant, is also common in these waters, as is also the case a little farther south, in La Plaisance bay, as well as in Sandusky bay, in the adjacent State of Ohio.

On the 14th of July, 1817, by proclamation of Lewis Cass, governor of the then territory of Michigan, the county of Monroe was established, with its present limits, with the county of Lenawee temporarily attached.

In September of the same year the township of Monroe was organized, and became the county seat of the new county.

Aside from the natural increase of the resident French, the population of the county increased but slowly until the introduction of steam navigation upon Lake Erie, and the opening of the Erie canal in the year 1825 afforded increased facilities for reaching this then remote western region.

NURSERIES.

The earliest modern horticultural enterprise, in Monroe county, of which we have authentic information, was the establishment of a nursery, which, about the year 1840, was conducted by a person then commonly known as "Variety" White. The subsequent history of this enterprise is unknown. It probably became merged in one of the establishments which date their origin from that period.

E. H. Reynolds, of Monroe, states that the first nursery established at that city was commenced by Hartwell & Bisbee and called the Monroe nursery. Two years later this was purchased by E. H. Reynolds, who subsequently sold it to I. E. Ilgenfritz, by whom it has been continued till the present time, but more recently under the firm name of I. E. Ilgenfritz & Sons. These nurseries cover some 300 acres of excellent land, thoroughly underdrained at a large expense, and are reported to supply stock to the amount of \$50,000 to \$70,000 annually.

Soon after the purchase of his nursery interest by Mr. Ilgenfritz, Mr. Reynolds commenced the Monroe City nursery, which he conducted for eight or ten years, after which it became the property of Reynolds, Lewis & Co., by whom it was conducted for fourteen years, when the company was dissolved, E. H. Reynolds assuming the management of the nursery, which then took his name.

In the spring of 1882 S. B. Lewis started the Floral City nursery at Monroe, putting into it, as is understood, a portion of the stock formerly belonging to the Reynolds, Lewis & Co. establishment. Both this and the E. H. Reynolds nursery are yet in operation.

An agricultural society for Monroe county was organized on July 17th, 1849, which has exerted a wide influence in building up the agricultural as well as the horticultural interests of the people. In 1852, the secretary, in his annual report, remarks: "The variety of fruits presented (at the annual fair) was larger than at any previous fair, and, for richness, has never been excelled in Michigan."

The committee on farms, in 1853, speak of the fruit and ornamental arrangements about the residence of R. Tolford, of Raisinville, as follows: "The front and back yards adjacent to the house are well filled with shade and fruit trees and shrubbery, judiciously disposed."

The report of the State Board of Agriculture for 1879, at page 455, states that the Monroe county society was organized in 1875. If this be true, it must doubtless be supposed that the original society had become disorganized, and that it was now re-organized.

In 1869 apples were reported to be but half a crop, peaches a full crop, and the yield of grapes to be 4,000 pounds per acre, worth 10 cents per pound.

Another establishment, known as the River Raisin nursery, about one and one-half miles from the city of Monroe, conducted by Greening Brothers, has been in operation for twelve or more years; but little seems to be generally known respecting it.

VINEYARDS.

The planting of grapes, for vineyard purposes, was commenced at Monroe, by J. M. Sterling, in 1863, followed by the late C. Bruckner, J. C. Sterling and others, in 1864 and 1865. The Pointe de Peaux vineyard, eight miles from the city, on the shore of Lake Erie, was planted during 1865 and 1866. The Detroit Wine Company planted fourteen acres of vineyard adjacent to the city of Monroe about this time.

Numerous other vineyards were planted at this time and soon after, which were generally so successful as to receive the highest commendation and in certain cases the awards of the orchard committees of the State Horticultural Society. At this period the number of acres in vineyard aggregated fully two hundred, and the total product was estimated to be fully 600,000 pounds of fruit.

This product was mainly consumed at home, in the manufacture of wines, although numerous markets for the fresh fruit were at hand, in neighboring villages and cities, and in the States of Ohio, Indiana and Illinois.

About 1883 and 1884 the disease known as "grape rot" began to seriously affect these vineyards, and has since sadly diminished their profitability, so much so, in fact, that the Pointe de Peaux and several others have been vacated and the lands devoted to other purposes.

These plantations were mainly of Concord, but with more or less of Catawba, Delaware, Ives and Norton's Virginia; a few plants of other varieties being occasionally added, mainly for experimental purposes.

In 1867 the committee on vineyards, of the State Agricultural Society, in their report, state that the entries were all within the lake towns of Monroe county, and in localities in which the soils are similar, if not fully

equal to those of the islands of Lake Erie. The field culture of the grape was first introduced here by J. M. Sterling. Over fifty acres have already been planted, and double that area was expected to be planted during the ensuing year.

The first premium was awarded to the Pointe de Peaux vineyard. They also commend the vineyard of Harry and Frank Clarke, of five acres, adjacent to the foregoing; those of Joseph Sedlacek, of four acres; John Reisig, nearly three acres; Martin Deistler, three acres; Deiderick & Breisacker, of eight acres, all of the city and town of Monroe; and those of George Hurd, eight acres, and Col. B. H. Campbell, eight acres, both of Sandy Creek. The second premium was awarded to Mr. Hurd. The Pointe de Peaux plantations were owned by Ives, Williams, Sterling and Noble, embracing about thirty acres, all of which was to be planted with grapes in connection with its use as a family summer resort.

In 1868 the first premium was again awarded to J. M. Sterling and the second to Deiderick & Briesacker.

In 1871 the first orchard committee of the State Pomological Society awarded the first premium for a general nursery to Reynolds, Lewis & Co., of the city of Monroe.

In 1872 awards were made by such committee as follows:—

G. W. Bruckner, Monroe, first premium to Snake Island vineyard, as best for profit, and to Henrietta vineyard as best Concord vineyard.

The orchard committee for 1873 awarded in this county as follows:—

To J. M. Sterling, Monroe, commendatory mention of apple orchard.

To Geo. W. Bruckner, Monroe, first premium; W. C. Sterling, Monroe, second premium, for vineyard for profit.

To J. M. Sterling, Monroe, second premium for vineyard for profit with succession.

To Geo. W. Bruckner, Monroe, commendatory mention of vineyard with succession.

To Geo. W. Bruckner, Monroe, first premium for Concord vineyard.

To Geo. W. Bruckner, Monroe, first premium; W. C. Starke, Monroe, favorable mention for vineyard for table use.

To Point de Peaux Wine Company, first premium; Diedrich & Briesacker, Monroe, third premium.

To I. E. Ilgenfritz & Co., Monroe, first premium; Reynolds, Lewis & Co., Monroe, third premium, for general nursery.

The awards to this county by the orchard committee of 1874 were as follows:—

To Antoine Weir, Monroe, second premium for vineyard for profit.

To Thomas Doyle, Monroe, second premium for vineyard attached to village or city lot.

To Geo. W. Bruckner, Monroe, first premium for Concord vineyard.

To Henrietta Bruckner, Monroe, first premium for vineyard for table use with succession.

To Pointe de Peaux Wine Company, Monroe, first premium vineyard for wine.

To I. E. Ilgenfritz & Co., Monroe, first premium; John G. Greening, Monroe, second premium, general nursery.

The awards of the State Pomological Society's orchard committee to Monroe county, for the year 1875, were as follows:—

To Geo. W. Brackner, Monroe, for best Concord vineyard, two premiums.
To I. E. Ilgenfritz & Co., Monroe, general nursery.

The occurrence of the Centennial Exposition during this year involved a large amount of special effort in the collection and forwarding of specimen fruits from this State. For this reason the State Pomological Society omitted, for the year, the offering of the usual orchard premiums and the appointment of an orchard committee.

In 1877, the orchard committee of the State Pomological Society awarded premiums in Monroe county as follows:—

To D. Ilgenfritz, Monroe, for young apple orchard.

To Charles Toll, Monroe, for vineyard.

To D. Ilgenfritz, Monroe, for quince orchard.

After 1877 the society ceased to provide for examinations and awards in this department.

This entire region is underlaid, at no great depth, with lime rock, which constitutes a prominent element in the overlaying soils, which are mainly a strong clay loam; although occasional plantations appear to be equally successful in overlaying deposits of sandy loam.

ORCHARDS.

As was remarked in the quotation from the paper of President Willits, in the early settlement of this county nearly every farm had its orchard of apples and pears, and the more modern settlers seem to have afforded little if any exception to this. Here, as elsewhere, however, the planting of orchards for commercial purposes has only been done to any considerable extent, as a response to the more recent requirements of the markets of the west.

Prominent among these recent plantations is that of D. Ilgenfritz, formerly connected with the nursery of his brother at this place, commenced in 1875, and including 1,000 apple trees, 500 pears, 500 orange quince and several hundred peaches, plums and cherries. This plantation was made on ground which had been thoroughly tile drained, and was examined and highly commended by the orchard committee of the State Horticultural Society in the year 1877.

An American chestnut grove of several acres extent, and growing wild among the native oaks stood, in 1829 or 1830, about three or four miles northwesterly from the city of Monroe. Whether or not this yet remains the writer is not informed. This and a similar one near the village of Wayne, in Wayne county, are believed to be the only groves of this kind to be found in southern Michigan; although chestnut trees and even small groves, artificially planted, are by no means uncommon.

A successful and satisfactory retarding house or refrigerator is in operation at Monroe, intended primarily for the keeping of eggs, butter, and the more perishable agricultural products, to await a satisfactory state of the markets; and furthermore for the retarding and keeping of perishable fruits to await a similar contingency.

The refrigeration is effected by means of ice, with an arrangement to avoid excess of atmospheric moisture in the confined space. The room is maintained at a temperature but three or four degrees above freezing during the warmest days of summer, thus holding tropical and other perishable fruits without perceptible change for almost any desirable period.

In making up the admirable exhibit of Michigan fruits the growth of 1875, at the opening of the Centennial Exposition in May, 1876, contributions were received from the following citizens of Monroe county, viz: E. H. Reynolds, Levi Buck, Charles Atkinson, Caleb Ives, P. Fisher, E. Jose, W. Bloodgood, C. Toll, A. White, J. M. Davenport, T. E. Mason, G. W. Burchin, Wakeman Reynolds and Robert Hendershot.

To the fall Centennial exhibit the following were contributed from Monroe county: I. E. Ilgenfritz, about fifty varieties of pears; J. M. Loose, pears; Reynolds, Lewis & Co., apples; Charles Atkinson, B. Compton, G. Brinkerhoff, Caleb Ives, grapes and other fruits; Diedrick and Pointe de Peaux, grapes and wines; E. Sumner, walnuts, hazel nuts and hickory nuts.

Monroe county supplied the superintendent of the State Horticultural exhibit in the person of Charles A. Ilgenfritz, and likewise the collector of the State exhibit of pears in that of his father, I. E. Ilgenfritz, both of the city of Monroe.

The census of 1884 gave to Monroe county, of

Apple orchards 9,334 acres, 294,305 bearing trees, yielding in 1883 83,280 bushels of fruit.

Peach orchards 139 acres, 13,060 bearing trees, yielding in 1883 168 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$37,768.

Vineyards 309 acres: grapes sold in 1883, 184,673 pounds.
wine made in 1883, 12,335 gallons.

Nurseries 286 acres; products sold in 1883, \$41,916.

Market garden products sold in 1883, \$7,553.

LENAWEE COUNTY.

Lenawee county was set off and established by proclamation of Lewis Cass, governor of the Territory of Michigan, on September 10th, 1822, and attached to the county of Monroe. It was organized as a separate county, under the provisions of an act of the Legislative Council of the Territory, which took effect on the 31st day of December, 1826. By an act of the Legislative Council, the county seat was established at Tecumseh, but it was removed to Adrian by an act of the State Legislature, which took effect on the 1st Monday of November, 1838.

In the summer of 1823, Musgrove Evans, of Brownsville, Jefferson county, New York, explored this region, and made his way as far as the present site of Tecumseh. He was so impressed with the advantages of the locality, and with the prospective value of the hydraulic power along the river Raisin in the vicinity, that he removed here the following spring with his family, accompanied by ten or twelve other settlers. During the summer of 1824, a village was laid out by the proprietors of the land, Wing, Evans, and Brown, and was dignified with the name of the renowned Indian chief—Tecumseh.

In the summer of 1825, Darius Comstock settled midway between Tecumseh and Adrian, in what is now the township of Raisin, where he is reported to have planted the first orchard in the county, during the same or the follow-

ing year. Other orchards were, however, planted about this time, or very soon thereafter, near Adrian, by Daniel Smith, Abram West, Milo Comstock and David Bixby.

In 1830 Israel Pennington started a nursery in the town of Logan, now known as Raisin, which he subsequently moved to the town of Macon, where it was maintained till his death, in 1883, a period of fifty years. In 1833 he planted an orchard of 100 apple trees, the first in the township of Macon. The trees were seedlings, which were subsequently grafted. Other orchards were soon after planted by Joseph Howell, James Collins and James Dennis, all of which are still alive and in bearing condition.

Mr. Pennington also planted a small pear orchard, of seventy-five trees, in 1848, of which, however, only a few Bartletts, Summer Bouchritines, Anjous, Aremburgs, Onondagas, Flemish Beauties, and Washingtons, now remain. He also planted a small peach orchard, which has wholly disappeared, as has an orchard of cherries also. In 1860 he planted out a few red cedars (*Juniperus Virginiana*), which are now fine trees, eight inches or more in diameter, and in 1868 he added a wind-break of five hundred arbor vitæ (*Thuja occidentalis*), as a protection to his residence and grounds. These are already grown to be fine trees, many of them five inches in diameter. Through his orchards and nursery, as well as by personal influence, Mr. Pennington, during his long life, exerted a wide influence in the promotion of orchard planting, as well as in the development of a tendency toward the improvement of rural home surroundings.

The vicinity of Adrian is believed to have had no more earnest, painstaking and conscientious horticulturists than were B. W. Steere, his father, and their families.

How much of the present tasteful beauty of its streets, public and private grounds, and cemeteries is due to their earnest, thoughtful and yet genial influence will scarcely be comprehended, save by those who have known them intimately and appreciatively. The nature and extent of such influence can hardly be better expressed than in the language of B. W. Steere, in response to a request for some account of his own experience in this direction, which we subjoin, nearly entire, in his own language, preceding it by a letter to him from M. J. Hoag, now of Rochester, Minn., in which is detailed the nursery experience of his father, Nathaniel P. Hoag, in Lenawee county, as follows:

"My father commenced his nursery in the year 1833, by planting a bushel of apple seeds. The following spring he procured cions of William Prince, of Long Island, and grafted ten or twelve thousand apple stalks. In 1837 he sold an undivided half of his nursery to E. Griscom, of New York. This partnership continued down to the date of my father's death, on the 23d of March, 1845. The following are some of the varieties he introduced: Apples—Esopus Spitzenburg, Baldwin, Newtown Pippin, Swaar, Rhode Island Greening, Rambo, Roxbury Russet, Yellow Bellflower, Talman Sweet, and Early Harvest; plums—Green Gage, Yellow Egg and some others; grapes—Isabella and Catawba; also Orange quince.

"In the year 1834 a scathing attack of the seventeen-year locust (*Cicada septendecim*) decimated the recently planted orchards of Lenawee county to an alarming extent. Father's orchard of about one hundred trees, that had been set, I think, two years, was completely ruined. Older orchards suffered less."

Following this letter Mr. Steere goes on to say: "The lamented Ira J. Thurston's was the second nursery started at Adrian (mine being the first), and I often think, with his zeal and enthusiasm for the business, his agreeable social qualities, and love of the beautiful, combined with an earnest, energetic character, how very different many things might have been at Adrian had he not been overpersuaded to make that last fatal balloon ascension (at Ionia).

"My father, David Steere, took a decided interest in collecting good fruits and in budding and grafting them at his home, in Belmont and Jefferson counties, Ohio, and some of us boys learned to tinker at such work very young. He left a fine orchard at the old home in Jefferson county when he came to Michigan, in the fall of 1833.

"Whether mother had as much taste as father in such matters, I do not know, as her labors and calling were not calculated to develop such traits. However that may be, some of us children must have been born with an uncommonly active, not to say good, taste for nice fruit, as witness the frequent testing of mother's pears, carefully laid away in remote corners, drawers, or the bottom of the big family clock; and the ripening of early apples, etc., was watched with a vigilance that often cheated even the birds out of the first taste.

"On the place, near Adrian, where we settled for the winter, was a bed of several hundred two-year seedling apple trees. The next spring, 1834, my elder brother, William N., and myself (a boy of sixteen), were set to graft these seedlings. We got such cions as we could of the neighbors, dug the seedlings, shortened the top and other roots a little, and cleft grafted them at the ground line; used no wax or ties, simply heaped up the soil a little, and O, how they did grow! It would hardly do to call that my first nursery, but never after did I raise such fine one-year trees. We moved that fall to land my father had entered in the west part of the county, taking the trees with us, and resetting them in the new ground, that had been grubbed and otherwise carefully prepared. Remember, we were in the wilderness, but the little trees were well cared for, and in a year or two, when the ground was cleared and fitted, father set out an orchard, selling and giving away the rest to friends and neighbors.

"Every fall for several years that orchard was manured, and worked the following season in vegetables, etc., and many of my noonday rests (?) were spent in fussing over those trees, scrubbing, hoeing, pruning, and lo! almost before we knew it, several varieties were in bearing—the first, I think, in the township of Rollin.

"Father also first introduced Fallawater from Ohio, and perhaps others; but I remember that, because he previously had it from Pennsylvania, at a time when it was greatly praised.

"My own work commenced, in Rollin, in 1843, when three pecks of apple seeds and a quantity of peach stones were planted; 2,000 two-year apple seedlings were bought, making about 4,000 root grafts, which were very nice at two and three years.

"Meantime father had established a home, four miles from Adrian, at Raisin Valley, and invited me to move my nursery to his place, which was done, after selling a large portion in western Lenawee and eastern Hillsdale.

"For several years while in Raisin Valley, my youngest brother, G. P. Steere, was my earnest helper and partner, but he soon left with a brother-in-law to start farther west. Father, too, was virtually a partner, receiving a portion of the proceeds for ground rent.

"The light sand of the valley proving unfit for nursery, peaches and cherries to a great extent being a failure, by 1850 we had decided to locate near Adrian, where we have since lived, and our little concern was known as the Adrian nursery.

"In the winter of 1842 and 1843 I was teaching near our old home in Ohio, and brought back from there and from New Brighton, Penn., a variety of cions, among which were Belmont Willow Twig, Newark Pippin, Sweet Vandevere, and later, from the east, Northern Spy, Chenango, Red Canada, Wagener and Early Joe, and still later, from Smithfield, Jefferson county, Ohio, Grimes' Golden, all of which, so far as I know (except Red Canada), I was the first to introduce.

"In addition to the above were the best cherries, peaches, etc., obtainable at an early day, from William R. Smith and J. J. Thomas. About 1846 or 1847 I bought a very good assortment of strawberries, etc., of the Lay Brothers of Ypsilanti. To these were added, from time to time, and from various sources more shrubbery, herbaceous plants, roses, and a great variety of ornamental trees, evergreens, etc., all supposed to be pretty hardy; but many of which, both deciduous and evergreen, shrubs, trees and flowers, cannot now be found in this county. I remember particularly regretting, after several years' trial, the loss of Deciduous Cypress, *Washingtonia Gigantea*, and the sweet little Swamp Magnolia (*M. glauca*). Pages might be filled with such losses, and the yet keener disappointment of finding fruits that had received unlimited praise, utterly worthless upon trial here. But I forbear, as all who have been long in the business know all about such matters.

"Of course the strongest reason for commencing the business was to make a living; but I trust a higher motive had its influence. For some time mine was the only nursery in this vicinity, and the desire to furnish the very best of everything to my customers took possession of me, and the thought that this was the way God designed that I should be of use to my fellows, lightened my labors and exalted my calling. But, alas! in looking over the past, how many mistakes and failures appear owing, in great measure, to my own ignorance of the best varieties and adaptation to soils, climate, etc. And yet there is some satisfaction in remembering that an honest effort was made to carry out my ideal.

"The first apples I saw were in Daniel Smith's orchard in 1834 (the old Bailey orchard, of canker worm notoriety), but I understood that Comstock's, and perhaps others, had borne some a year or so before. A Golden Russet, planted by D. Comstock, bore thirty-three bushels in 1848 and seventeen bushels in 1849. This the proprietor at the time told me, and that he sold that number of bushels each spring following from that tree for one dollar per bushel."

In 1852 the committee on farms awarded a first premium to that of Dr. T. H. Bailey, of Adrian. He reports of bearing apple trees, two hundred and eighty; planted in orchard, two thousand; of peach trees, eight hundred; cherry, seventy; pears seventy (six bearing); quinces, sixty; nectarines, three; apricots, eighteen; ten thousand nursery trees, seven thousand of good size for transplanting.

The foregoing premium orchard is doubtless the one referred to in a previous paragraph, as "The old Bailey orchard, of canker worm notoriety." The case is in several respects so notable that the following history by a near neighbor, B. W. Steere, of Adrian, is given almost entire:—

Dr. T. H. Bailey died about 1867 or '68. His son Robert settled upon the place in the spring of 1871. He says that, to the best of his recollection, from four to eight acres were, at that time, badly infested with canker worms.

Henry Bailey and wife, who occupied the place for two or three years after the doctor's death, says the worms were abundant in 1869. I think I knew them as early, if not still earlier, and doubtless they were plenty enough before the doctor's death, though unnoticed by him or others from lack of acquaintance with them.

The four or five settings, or orchards, covered thirty acres or more. The first, or old orchard, of some two hundred trees, was planted about sixty years since, by Daniel Smith; and probably old age had quite as much as canker worm to do with the failure of these. The remainder, planted at various times, from about 1848 to 1855, were mostly set twenty-one feet apart; and, of these, there must have been twenty-five hundred or more.

Nearly two-thirds of the ground is now entirely cleared of trees. Of course all these were not dead; possibly some of them not very much injured; but plenty of sickly trees remain, to compensate for such.

As to the time they (the canker worms) continued, we know they were there in 1868 or '69, which gives twelve years to 1881; and very probably six or eight years should be allowed for their gradual increase from a small beginning, before their presence would become observable by inexperienced persons. This orchard is on the east line of Adrian township, and the much traveled highway seems to have confined the worms for a long time; but at last, when very abundant, they crossed the road, into four small adjoining orchards, but too late to do great damage.

Several other orchards from one to six or eight miles distant have been attacked and more or less injured. No preventions or remedies worthy of notice have been applied.

The only other orchard that has suffered nearly as much as this is about two miles east of it, in the town of Raisin. It was planted about 1848 or '50, and was a very fine one. I am unable to learn when the worms were first discovered. Judging from the damage they must have been there a long time.

I have seen and questioned Will Lowe, who says that within the four years during which he has owned the place he has not seen a single canker worm. This agrees very well with the account given by the Baileys, although Robert Bailey thinks they disappeared gradually during several years. I suspect that the very warm winter of 1881 and '82 may have been the cause of their decline. My notes respecting that winter, made at the time, say: "A remarkably mild winter; robins, February 11th; blue birds and song sparrows, February 15th; wrens and other birds the 29th." April is mentioned as backward, cold and stormy, with much northeast wind. It is well known that the moths appear about as early as possible, and it seems probable that they may have availed themselves of some of the fine weather that winter much earlier than usual, and been destroyed by a sudden change before depositing their eggs, or that the eggs, when laid, may have hatched too soon, and the larvæ starved before the foliage appeared, as is sometimes the case with the tent caterpillar. Whether either of these theories is correct or not it is certain that, in passing the orchard during the spring of 1882, a great change was observed, which continued to astonish me as often as I passed it, till at last, notwithstanding the previous impression that they had come to stay, I

was forced to the conclusion that they were pretty well cleaned out. Of course I could not be sure that all were gone, while the popular opinion is that it took several years, nor can I be sure that none are left at this time. I note, however, that they disappeared in all these orchards about the same time.

There are several ways in which they may have been introduced. About 1859 or '60 Dr. Bailey received cions of several kinds, from friends in Massachusetts, and top grafted a number of trees, some of them quite near where the worms were first noticed. There may, perchance, have been eggs on some of these cions. Whether few or many would matter but little. With the good staying character of this insect two might suffice, since their increase, though slow, would surely become ultimately manifest.

Or they may have been brought on bushes, or in some way from native trees, although I never saw them in the forest till long after they appeared in our orchards. When the Bailey orchard looked as though fire had passed through it, excited men who knew nothing of canker worms would cut large branches full of worms, to be carried to their homes, or to be shown in town, scattering them by the way, and perhaps conveying them many miles upon their clothing or wagons. Possibly they came to us in some such manner, even from a long distance.

Subsequently Mr. Steere writes that, a number of years ago, at one of their Farmers' Club meetings, Hon. A. D. Hall stated that he, with the help of hired men, had destroyed the canker worm, at his residence near Tecumseh, by shaking them down upon straw and burning. He thinks that Mr. Hall said he had "plenty of them," before hearing of the case of the Bailey orchard. He may, however, have mistaken something else for the canker worm.

Joseph Beal and William, his son (father of Dr. Wm. J. Beal, of the State Agricultural College), moved to the township of Rollin in 1883, and during that year William Beal and Erastus Aldrich purchased government land in that township.

During the year 1834 Joseph S. Allen also purchased land in the same township and settled thereon, and the next spring planted a seedling orchard among the burned and blackened logs.

About 1840 C. C. Cooley commenced a nursery in the township, the western portion of the county proving well adapted to the culture of fruits and even to peach culture but for occasional paroxysms of extreme cold.

In 1886 John W. Allen had a fine young peach orchard of one thousand trees, which may be expected to yield its first crop in 1887. There is a good market for the fruit in the vicinity; also a commercial fruit dryer in the village of Rollin.

An apple orchard in Rollin, on the farm of the late John Hawkins, now fifty years old, is yet in good bearing condition. On the same farm a tree of sugar pear, fifty-two years old, has borne five bushels of pears in a single year. The largest orchard in this vicinity is that of Bishop Ames, consisting of twelve hundred apple trees. Nearly every farmer grows more or less fruit. The market point is Hudson, where as many as three thousand five hundred barrels of apples have been marketed in a single year.

In 1877 S. B. Mann, in a paper read before the State Pomological Society at its winter meeting, held at Pontiac, says: "There was never a more bountiful crop of apples harvested in the county than that of 1876."

Peter Collar, of Palmyra, planted last spring an orchard of four hundred

pears and three hundred plums. The severe winters have almost entirely destroyed the peach trees, although Porter Beal, of Rollin, has an orchard among the numerous little lakes of that part of the county which yields a good crop of peaches and plums almost every year.

In 1871 George Hall, of Deerfield, in the eastern part of this county, sold from eight acres of bearing orchard eighty barrels of fall apples, at ten shillings per barrel, and five hundred and fifty-six barrels of winter fruit, for which he received \$1,245, the net proceeds being \$1,150. The orchard was fourteen years old, consisting mostly of Baldwins and Yellow Bellflowers.

The State report gives the value of the orchard products of the county for the year 1870 as \$363,828, and the market garden products as \$35,195.

In 1874 the orchard committee of the State Pomological Society notice the cold grapery and grounds of A. Sigler, of Adrian, as follows: "He has constructed a cheap grapery on the rear of his city lot, with glass on two sides, and a lean-to roof, with so little outlay of cash as to surprise most persons. Here we found growing Black Hamburg, Rose Chasselas, White Chasselas, White Muscat of Alexandria, White Tokay, Bowood Muscat, and many other varieties—about thirty in all. This grapery demonstrates the fact that any one with a little knowledge of grape culture, or with the disposition to acquire it, and with a little means and time can have a cold grapery and fine grapes.

"Every foot of ground on Mr. Sigler's lot is made to produce fruit of some sort. He has several varieties of pears, and Early Purple, Black Tartarian and Black Eagle cherries."

In 1877 this committee speak of the plum orchard of Porter Beal, of Rollin, as being on elevated land, exposed to westerly winds, and yielding profitable returns. The trees were budded on peach stocks.

The Lenawee County Agricultural Society was organized on January 27th, 1849.

The Adrian Horticultural Society was organized as early as 1842. There was also an Adrian Horticultural Society organized on March 21st, 1851. Whether the latter was a mere reorganization of the former, or whether the former had become defunct, leaving room for a new and distinct organization, seems uncertain.

Its report for 1878 states that at that time its library consisted of over two hundred volumes, and that it was in receipt of eight of the leading agricultural and horticultural periodicals of the day. It became auxiliary to the State Horticultural Society January 19th, 1881.

The State Agricultural Society held its seventeenth and eighteenth annual fairs at Adrian, in September of the years 1865 and 1866.

On February 28th, 1882, the State Horticultural Society held its winter meeting at Hudson, in western Lenawee, with a full attendance and a good degree of interest.

During the month of April following, the Lenawee and Hillsdale Horticultural Society was organized, with headquarters at Hudson, and constituted an auxiliary to the State Horticultural Society.

A village horticultural society was in existence at Tecumseh in 1852, but there is no subsequent account of its transactions, hence it is believed to have soon become extinct.

At a meeting of the State Pomological Society held at Hillsdale, B. W. Steere, S. B. Mann, and D. G. Edmiston were appointed to learn the history

and to determine the proper name of an apple locally known in parts of Lenawee county and also in Fulton county, Ohio, as Steele's Red. At the meeting of the society held at Battle Creek, June 16th, 1880, B. W. Steere reported on behalf of the committee, recommending that Morris' Red be the recognized name of this apple and giving its history as follows: The original tree grew and may still be growing in Connecticut. Two sprouts, dug from its roots, were brought by a Mr. Childs to Madison county, N. Y., fifty or sixty years ago, and planted near Mr. Morris' former home. From these trees Mr. Morris brought cions to Fulton county, Ohio, and from there to this county. A few years since the "sprouts" planted in Madison county were yet vigorous and productive. In quality the fruit will rank as "very good."

The following citizens of this county contributed specimens to the exhibit of Michigan fruits at the Centennial Exposition in Philadelphia: The Farmers' Fruit Preserving Company of Palmyra, S. B. Mann, secretary, samples of dried Belmont apples, cherries, currants, raspberries, Trophy tomatoes, Stowell's evergreen corn, cabbage and string beans. The Lenawee Farmers' Club sent a large collection of apples, embracing 107 varieties carefully packed, the names of the growers and the number contributed by each being as follows: From Adrian—B. W. Steere, 60; John Hunt, 3; Fred Meddick, 12; Charles Bradish, 6; H. N. Knowls, 1; Ira Ladd, 12. From Dover—Smith Thompson, 2; Daniel Holdridge, 2; James Therber, 1. From Macon—Israel Pennington, 28; Joseph Pennington, 5. From Blissfield—W. Grandy, 13; Dr. R. B. C. Newcomb, 20; M. H. Cogswell, 3; Luther Smith, 1; George Sisson, 3; R. B. French, 3; H. B. Clark, 3; L. E. Goodrich, 15. From Raisin—E. B. Hibbard, 14; Horace Hoxie, 14; Loyal Lovejoy, 16. From Palmyra—Peter Collier, 6; Henry Furbeck, 6; S. B. Mann, 8. From Rome—Samuel Reed, 1. From Canandaigua—J. Lee, 5. From Ogden—W. H. Cheeney, 9. From Madison—T. J. Gibbs, 8. From Ridgeway—John Britton, 21. From Tecumseh—J. Kennedy, 18. The pears were also excellent, and were contributed by J. G. Clenathan, Henry Furbeck, N. J. Strong and F. Lewis. A. Sigler contributed a very good display of foreign grapes.

In 1851 the farm committee of the State Agricultural Society submit the following statement of Samuel Rappleye, respecting the fruit department of his farm in Adrian: "I have three hundred and fifty apple trees set on my farm. All except a few are grafted with the choicest kinds of fruit. I have a choice collection of peaches, pears and cherries. My management of young trees is to cultivate the ground with a hoed crop, either corn or potatoes; manure with barnyard manure and ashes."

In 1869 E. P. Powell, of Adrian, entered a pear orchard, in competition for a premium offered by the State Agricultural Society. The orchard consisted of seventy-nine standard trees, and was highly commended by the proper committee, but the award was withheld, from lack of an adequate statement of the system of management.

At the annual county fair of 1853 D. K. Underwood, chairman of the committee on fruits, in his report, remarks: "Your committee would say that, in their opinion, there is, from year to year, an increased interest in our community on the subject of fruit culture. The display of fruit, at this annual fair, occurring so late in the season (October 5th and 6th) and in a year in which our apple crop is so much below the average, affords ample evidence of this. We rejoice in this increased production and consumption of good fruit, as they indicate an increase of refinement and comfort among our people."

At this fair the executive committee of the society also highly commend the good taste displayed by the committee of ladies, in their beautiful ornamentation and arrangement of Floral hall.

In 1854 a committee of the Adrian Horticultural Society, in their report, made by B. T. Strong, remark that the season has been one of severe drought, unfavorable to some of the finer fruits. Among the cherries claiming most attention were Early Purple, Baumann's May, Black Tartarian, Black Eagle, Yellow Spanish, Downer's Late, Governor Wood, Elton and Large Heart-shaped Bigarreau. The best currants exhibited were Red and White Dutch and Black Naples. The finest gooseberries were Crown Bob, Roaring Lion, Whitesmith, Red Warrington and Houghton. Plums and apricots should only be grown by those who can command time for their proper cultivation. Most of the plum trees in this vicinity have become a public nuisance. No peaches worthy of notice have been exhibited. The Catawba and Isabella grapes have been the only worthy ones exhibited. Most of the standard varieties of apples are grown in this vicinity. William's Favorite, Red Astrachan, Waxen, Northern Spy and Newtown Pippin should be extensively grown. Standard pears have succeeded well. Dwarfs are to be recommended only for those who will give them intelligent care. Many persons plant too many varieties. Buyers are cautioned against tree peddlers and hawkers, and are advised to prefer home grown trees. The committee believe that commercial fruit culture may prove second to no other pursuit.

In 1872 a stock company was organized at Palmyra, and embarked in the business of evaporating fruits and vegetables, on a commercial basis, under the secretaryship of S. B. Mann. The establishment was subsequently burned. The association was reorganized, and the establishment was rebuilt. It was operated several years with fair success, but was finally a second time destroyed by fire. The establishment not being insured, the loss was a severe one to the owners. It has not been again rebuilt.

Adrian, although much the largest city in the county, has no public parks of considerable extent. There are two, of about one acre each. One called Monument square, situated in the eastern part of the city, contains the soldiers' monument, and is quite well cared for, containing many fine deciduous trees. The other, located in the western part of the city, called Berry's park, contains some beautiful evergreen and deciduous trees.

Adrian College has fine grounds, about twenty acres in extent, containing several acres of fine native forest, in the rear of the buildings, lying on a gentle slope to the east. This is much frequented by the students for purposes of recreation. The campus is planted with evergreen and deciduous trees, flowering shrubs, and vines. Some attention is given to the cultivation of flowers in beds.

By act of the Legislature, approved May 31st, 1879, a Reform School for Girls was provided for. The control of the institution is placed mainly in the hands of ladies, with Mrs. Samuel L. Fuller, of Grand Rapids, as president; and it has been located about one and one-half miles north of the city of Adrian, upon forty acres of land, the gift of that city, beautifully situated, and tastefully laid out and planted. The establishment was not opened until August 1st, 1881, hence the intended landscape effects of the arrangement and planting are as yet but imperfectly realized. Ultimately these may be expected to exert a favorable influence in aid of the reformatory purposes for which the institution was established.

Oakwood cemetery contains about one hundred acres, handsomely located and laid out, on the banks of the Raisin, in the northeastern part of the city of Adrian. It contains a large number of old forest trees of nature's planting, ere the foot of civilization had trodden the soil. These have been interspersed with many varieties of evergreens, planted over thirty years ago, which are now disputing with the natives for possession.

The census of 1884 gives to Lenawee county, of

Apple orchards, 13,001 acres, 465,720 bearing trees, yielding in 1883, 161,-893 bushels of fruit.

Peach orchards, 369 acres, 29,443 bearing trees, yielding in 1883, 424 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$81,233.00.

Vineyards, 50 acres: grapes sold in 1883, 58,462 pounds.

wine made in 1883, 314 gallons.

Nurseries, 21 acres, products sold in 1883, \$740.00.

Market garden products sold in 1883, \$22,833.00.

HILLSDALE COUNTY.

The county of Hillsdale was set off and so named by act of the Legislative Council of the Territory of Michigan, approved October 29, 1829, and the same was fully organized as a separate county by a subsequent act of that body, approved February 11th, 1835. Its name was suggested by the diversified character of its surface.

The county seat was located at Jonesville by proclamation of Governor Lewis Cass, dated February 16th, 1831, and was removed to Hillsdale—its present location—on January 30th, 1843.

The following description of its surface, soils, and elevation is extracted from a history prepared for the county pioneer society, by F. M. Holloway, in 1877:—

“The soil is variable, that of the north part being mostly a gravelly loam with clay subsoil, while in the southern part a clay loam predominates. It was originally considered a timbered country, abounding in beech, maple, oak, elm, hickory, basswood, whitewood, black walnut, and cottonwood in all the towns; yet there was not one but had its belt of oak openings or burr oak plains.

“The surface is rolling, but not hilly,—a high table land,—the highest in the more southerly portion of the State, being 630 feet above Lake Erie, and 616 feet above Lake Michigan. It is the source of all the principal rivers of Southern Michigan, viz.: Grand, Kalamazoo, St. Joseph, Little St. Joseph, Tiffin, and Raisin, which find their feeders in the numerous and beautiful lakes which dot the surface of the county in different parts. These lakes, though not large, are generally of great depth, with beautiful gravelly bottoms and fine pebbly shores, abounding in fish, such as are usually found in western inland waters. The above mentioned rivers all have prominence on the maps of our country, the first three traversing the State in a northwesterly direction and emptying into Lake Michigan, the fourth and fifth in a south-

erly direction until they unite with the Miami, there to swell its bosom as a feeder to our inland ocean, and the sixth and last making in a due east course until it reaches Lake Erie."

In 1827 Captain Moses Allen settled at Allen's prairie; and in 1828 Benaiah Jones, Jr., located at the point where the great Indian (sank) trail crossed the St. Joseph river.

The village of Jonesville was laid out by Benaiah Jones, Jr., and plat recorded in Lenawee county, January 31st, 1831, at which date there were said to be but 1,280 acres of land located, and but about twelve settlers within the county.

The earliest plantations of orchards were made by W. Brady, Somerset; W. Gaige, Fayette, and E. Maxon, Pittsford; but at what dates, we have not been able to learn, except that Daniel Pratt and —Harrington, of Somerset planted orchards as early as 1833.

As early as the year 1851, the farm committee of the State Agricultural Society report the statement of W. H. Miller, of Moscow, respecting the fruit department of his farm as follows: "Number of apple trees, one hundred and twenty; one-half grafted; with forty or fifty peach trees; also fifteen cherry trees, of various kinds. Keeps well pruned, and the ground loose with chip manure."

In 1854 H. B. Chapman, of Reading, in entering his farm for the premium of the State Agricultural Society, states that "he has two hundred grafted apple trees, of winter varieties; also one hundred and seventy fruit trees other than apple. He has not been troubled with insects. He washes his trees with strong lye, and keeps them as clean as a hill of corn."

In 1867 Secretary F. M. Holloway, of the county society, in his annual report, remarks: "Our fruit interest is becoming a very important one. Apples are very abundant; but, owing to the dry autumn, they matured imperfectly, and are small and perishable. Peaches were abundant for home consumption; but from the uncertainty of the crop, farmers have neglected to keep their orchards fully set. Pears are being extensively cultivated, and with marked success. The same remark will apply to grapes and smaller fruits generally.

"In 1868 apples were a light crop, and the fruits small; no peaches. Fruits set well in the spring, but the cold rains of May and June blasted most of the apples.

"In 1870 at the county fair, there were forty-five entries and twenty-one awards in floriculture; and three hundred and fifty-six entries and seventy-five awards on fruits; the department of fruits taking the lead, and making, of itself, a magnificent show."

"In 1871 the entries of fruits, at the annual fair, were five hundred and sixteen; and of vegetables fifty-six, in a total of thirteen hundred and eighty-three entries."

Nurseries have not been found profitable on account of the winter-killing of the stock. Nursery products are mainly imported; largely from Rochester, New York.

The ornamentation of cemeteries has been rarely undertaken, till within the last ten years; since which the planting of such grounds with both deciduous and evergreen trees has become more common.

Several commercial dryers have been started, but they have generally failed. Portable dryers are more commonly used.

We are indebted to F. M. Holloway, for many years the secretary and responsible manager of the Hillsdale County Agricultural Society, for the following not too flattering statements respecting the fruit growing capacities of this county:—

“In reply to your inquiries, I may say that Hillsdale county is not to be classed as a No. 1 horticultural county. Its altitude, its gravelly and sandy soils, conspire to occasion short-lived trees. Extremes of heat and cold tend to shorten life. It is true, after fifty years' trial, we find our catalogue of large fruits reduced to the apple, pear and quince; small fruits, to strawberries, raspberries and blackberries; the last two uncertain because of freezing in winter. Peaches may be counted out. Plantations go up within a few years. Few grapes—these only for home use. Many trials have been made with small fruits for Chicago and Detroit markets. These have proved failures, through uncertainty of season, or slow transportation and excessive charges. There has been no profit in fruit for this county, except in apples. This crop is fair, three years out of four. Our best shipments have reached 100,000 barrels in some years.

“These are raised on farms given to mixed farming. Quality good, would be better if more care were taken in trimming and clearing from tent caterpillar, curculio and codling moth. Have had rare cases of army worm. No complaint of late. Pears frequently suffer from blight. From the above, which are facts plainly stated, you will readily designate our county as outside the fruit belt of Michigan. We should not claim what fifty years of experience tells us we have not.”

The commercial fruit dryer of E. L. Kelley & Sons, at Reading, in this county, made a creditable exhibit of its products at the New Orleans exposition, of 1884 and 1885, and is still in operation, consuming 1,000 bushels of fruit per week, and employing fourteen hands.

From the reports of the Smithsonian observer, in the town of Litchfield, in the northwesterly corner of the county, we learn that in December, 1872, the minimum temperature was as low as -23° , and, in the following February, as low as -30° , and that the range of the thermometer during the winter was as much as 79° , with the result that peach trees were generally killed, while apples and other of the hardier fruits were mainly uninjured.

The orchard products of this county of the crop of 1870, were reported to have amounted to the sum of \$133,346. Fruits for the Centennial exhibit at Philadelphia, in 1876, from this county were contributed from a goodly number of orchards. Among the contributors, whose fruits went to constitute the exhibits of the State Pomological Society, we mention Dr. Tims, F. S. Blackman, Sylvester Clark, C. R. Coryell, F. Kirby, H. K. Abbott and H. B. Chapman.

In 1877 an orchard and small fruit and vegetable garden, the property of H. B. Chapman, of the village of Reading, was examined by the orchard committee of that society, receiving very high commendation, as did also the apple orchard of Charles Cain, of the same town.

By invitation of the county agricultural society, the State Pomological Society, in 1880, held its February meeting in connection with the regular farmers' institute of the former society, with a success gratifying to all concerned. During the year 1886 a horticultural society was organized in this county, with headquarters at Jonesville. The Lenawee and Hillsdale Horticultural Society has also its headquarters at Hudson, near the east line of the county, thus accommodating many in that part of this county.

C. W. Garfield, in "A Brief of Horticulture," published in 1884, remarks: "At the Hillsdale fair each year may be seen the most attractive county exhibit in the State. Peaches are grown to some extent on the high lands in eastern Hillsdale and western Lenawee which find a ready home market at good prices. In this region a considerable attention has been given to the embellishment of farm premises and the planting of screens of evergreens for ornament and protection."

The census of 1884 gave to Hillsdale county, of

Apple orchards, 11,579 acres, 383,076 bearing trees, yielding in 1883 98,-127 bushels of fruit.

Peach orchards, 259 acres, 24,327 bearing trees, yielding in 1883 113 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$50,533.

Vineyards, 23 acres: grapes sold in 1883, 6,694 pounds.

wine made in 1883, 1,401 gallons.

Nurseries, 32 acres; products sold in 1883, \$3,051.

Market garden products sold in 1883, \$18,213.

BRANCH COUNTY.

This county was originally set off, and received its present name, by act of the Legislative Council of the Territory of Michigan, approved October 29th, 1829, and was organized by an act of that body, approved February 1st, 1833.

It was named from John Branch, secretary of the navy in Andrew Jackson's cabinet.

An Indian trading post is alleged to have been established at or near Coldwater in 1821, by Peter and James Godfrey, but it is understood that no permanent settlement was made in the county prior to 1826, soon after which a settlement is supposed to have been effected at or near the present Coldwater. Be this as it may, Allen Tibbitts removed from Plymouth, Wayne county, and settled at Coldwater on July 20th, 1831, at which date the village consisted of but a single log-house, of but one room, which his and another family occupied during the remainder of that summer.

The settlement of the county must have progressed but slowly, since, as late as 1836, the three townships of Quincy, Algansee and California were yet under a single township organization.

The first nursery of which we have any account was planted in the year 1831 or 1832, in the township of Bronson, on the farm of Seth Dunham.

During the latter year Mr. Dunham procured twenty apple trees from Defiance, Ohio (?), fifteen of which he planted in Bronson; the remaining five were planted at Branch, then the county seat.

Of those planted in Bronson, twelve are yet alive and thriving, the largest being eight feet in circumference at the base, with a spread of branches of thirty feet. Two of the twelve have produced, in a single year, one hundred and ten bushels of apples, forty-five bushels each being a common yield.

In 1836 Samuel Berry planted the first orchard in Quincy, consisting of twenty-five seedling apple trees.

In 1839 Nathaniel Fisher, of Algansee, planted a small seedling nursery of apples and peaches.

John Roberts, of Coldwater, also planted a seedling apple nursery about the year 1838 or 1839. The trees were sold ungrafted. This is reputed to have been the first nursery planted in the county.

The first grafted orchard of two hundred trees was planted by Lucas Joseph, in the township of Quincy, in 1840. The most productive and profitable of these were ten trees of a variety locally known as Virginia Redstreak, or Seeknofurther, from which, in 1845, he sold one hundred bushels of apples for \$100, and in 1846 one hundred and twenty-five bushels for seventy-five cents per bushel. Other varieties also produced abundantly. Peaches, plums and pears were also, at that time, abundantly successful.

In 1841 Lucas Joseph, in company with C. H. Hagerman, formerly of Rochester, N. Y., but more recently from Riga, Lenawee county, Mich., planted the first grafted nursery, consisting of 10,000 trees, which were very successful.

In 1842 Rev. Lewis Robbins planted a nursery in Algansee, comprising sixty varieties of apples, together with several varieties of pears, which had been grafted upon apple roots, and which were consequently short-lived. He also planted an orchard of two hundred and fifty apple trees, consisting of thirty varieties, and an acre of quinces. The latter winter-killed within a few years.

L. M. Leet, of Bronson (to whom the writer is indebted for many of the foregoing facts), has been employed in the growing of small fruits since 1875, his plantation embracing about two and one-half acres. His most profitable crop—that of 1882—yielding, from less than one acre, a net return of \$369.

During the continuance of the Centennial Exposition of 1876, at Philadelphia, the following citizens of the county contributed fruits to the collections of the State Pomological Society, for that exhibition, viz: F. H. Foster, F. Olds and J. Shaw, of Union City; J. Shenvernen and Wm. R. Cair, of Batavia; J. H. Lawrence, of California; H. Wilson and F. H. Atwater, of Kinderhook; Den. Selover, of Coldwater. These collections were forwarded by Eli Bidleman, of Coldwater.

The State Pomological Society held its annual meeting, occurring during the first week of December, 1876, at Coldwater, upon the invitation of the Coldwater Horticultural Club.

This association, which was organized December 23d, 1876, became auxiliary to the State Pomological Society, to which it reported annually down to the year 1881, when it seems, for some unexplained reason, to have become disorganized.

A county agricultural society was organized as early as November 15th, 1851.

Branch county, by the census of 1884, has of apple orchards 8,856 acres, 289,884 bearing trees, yielding, in 1883, 103,199 bushels of fruit.

Peach orchards, 90 acres, 6,962 bearing trees, yielding, in 1883, 408 bushels of fruit.

The value of orchard products of all kinds, sold or consumed, in 1883, was \$50,051.00.

Vineyards, 28 acres: grapes sold in 1883, 1,710 pounds.
wine made in 1883, 87 gallons.

Nurseries, 11 acres; products sold in 1883, \$800.00.

Market garden products sold in 1883, \$5,943.00.

ST. JOSEPH COUNTY.

This was set off and named as a separate county by enactment of the Legislative Council of the Territory, approved October 29th, 1829, and was organized in pursuance of a subsequent act of the same body, approved November 4th, 1829. It was named by the Jesuits in honor of the husband of the Virgin Mary, who was regarded by them as the patron saint of "New France," their name for what is now our northwestern States and Canada.

At the date of the first white settlements the county was, in part, occupied by the Pottawattomie Indian reservation. An exploration for the purpose of settlement was made about the year 1825, but a few French "habitans" had, several years previously, settled here for the purpose of trade with the Indians, and had done something in an indifferent way in the cultivation of the soil.

In 1826 John W. Fletcher, Captain Moses Allen (spoken of in connection with the first exploration of Hillsdale county), and a Mr. Hubbard of Wayne county made a prospecting tour through this county, at which time there were no settlements west of Washtenaw and Lenawee, save one at Bertrand in Berrien county. The prospectors returned east, and within a short time Allen and Fletcher became settlers, the first, for agricultural purposes, in the St. Joseph Valley.

In 1827 John Winchell, Leonard Cutler and Arba Heald settled on Pigeon Prairie. A Mr. — Olds and Asahel Savery came the same year, also others at Mottville, and George Thurston and John Sturgis on Sturgis Prairie.

So far as has been learned, the first nursery in the county was planted by Leonard Cutler on White Pigeon Prairie about 1830. No nurseries remain at the present time within the county, it being the impression of most planters that eastern grown trees are to be preferred.

Among the first orchards planted was one of twenty-five trees by Thomas Burns, on lands now owned by J. A. Hartzer. A few of the trees yet remain, now fifty-four years old.

Elias W. Taylor, the oldest Indian trader in this region, planted about thirty-three apple trees in the spring of 1832, near where the village of Mottville now stands, a few of which yet remain.

When Thomas Burns settled here, in 1832, there was an orchard, then apparently fifty years old, just back of an old trading house, on the bank of St. Joseph river, where the village of Mottville now stands. A few of these old trees are yet standing upon the river bank.

In 1868 apples yielded only one-fourth of an average crop, owing to the preceding cold winter and spring, and the prevalence of the codling moth. Peaches were but one-tenth of an average crop.

In 1869 apples were mostly frozen before gathering.

In 1870 a fine display of flowers and house plants added great beauty to the floral hall.

In 1876 a collection of fruit from this county was contributed to the exhibit of the State Pomological Society, at the Centennial, by A. J. True, of Three Rivers.

An association known as the Colon and Matteson Pomological Society was organized as auxiliary to the State Horticultural Society, on the 8th of October, 1879, at which date it held a successful meeting and made a fine

exhibit, although the day was stormy. Meetings were also held in April and September of the following year, and the society made its regular annual report for the year 1880, since which year reports seem not to have been made.

A society assuming the title of the Colon Floral and Art Association was organized on the 18th of September, 1877. At that date a floral fair was opened, with a fine display of five hundred pots of specimen plants, together with a great variety of hanging baskets, quite a number of floral designs and an indefinite number of vases of cut flowers, interspersed with fancy work and paintings. The association held several meetings, and at the last one reported—in the autumn of 1880—it united with the Colon and Matteson Pomological Society in a joint fall exhibit, since the report of which neither association seems to have communicated with the State Society.

The St. Joseph County Agricultural Society was organized November 29th, 1829.

St. Joseph county, according to the census of 1884, has of apple orchards 6,179 acres, 186,223 bearing trees, yielding in 1883, 55,155 bushels of fruit.

Peach orchards, 66 acres, 3,481 bearing trees, yielding in 1883, 192 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$28,729.00.

Vineyards, 16 acres: grapes sold in 1883, 12,653 pounds.
wine made in 1883, 24 gallons.

Nurseries, 2 acres, products sold in 1883, \$633.00.

Market garden products sold in 1883, \$5,309.00.

CASS COUNTY.

This county was set off by act of the Legislative Council of the Territory, approved October 29th, 1829, and was organized in pursuance of an act of the same body, approved November 4th, 1829.

It was named from Lewis Cass, at that time the governor of the Territory. The county seat was established at Cassopolis, in the year 1832.

The lands included in this county were not offered for sale till June 16th, 1829, while portions of the county were occupied by the reservations of three bands of Pottawattomie Indians. For these reasons, doubtless, although a few pioneers located within its limits at a very early date, the settlement of the county proceeded but slowly prior to the date of such public sale.

The earliest permanent settlers in the county were Uzziel Putnam and William Baldwin Jenkins, who located on Pokagon prairie late in the autumn of 1825, and who were soon followed by Squire Thompson, Abram Townsend and Israel Markam and his son.

In the spring of 1830 Ira Nash planted a small orchard at Geneva, the trees for which were obtained at a small nursery on or near Baldwin's prairie. During the same spring Lewis Edwards brought from Ohio and planted in orchard, on Pokagon prairie, three hundred apple trees and one hundred pear trees, together with currants, raspberries, etc. The apples were, as recently as 1875, still in a thrifty condition, but the pears had been mostly

killed by the severe winter of 1855 and 1856. In 1832 Isaac Shurte planted an orchard, the trees for which came from a New York nursery. Having little hope of their success he called them "Yankee trees," but, when in bearing, he was so well pleased with them that he increased the plantation. The author of a History of Cass County remarks that "fruit growing has received considerable attention from the farmers of Mason township," and that it probably ranks as the first township in Cass county in this respect.

In 1854 Justus Gage, of Dowagiac, on entering his farm for the premium offered by the State Agricultural Society specifies "that he has over five hundred apple trees, two hundred of which are in bearing, and the others are from one to three years planted; consisting, in part, of sweet fruit intended for feeding to stock, and in part, of long keeping winter fruit for market. He has also twenty-five pear trees, twenty cherry, thirty peach, ten plum, ten quince and twenty grape. He has been much troubled with the apple tree borer, the codling moth and the curculio."

In 1868 apples were but one-third of an average crop.

In 1869 many apples were frozen before being picked.

In 1870 the secretary of the County Agricultural Society reports that "for quality of fruit the county challenges competition, while vegetables of all kinds are raised in abundance, and large quantities of both fruits and vegetables are exported. In 1861 he also reports that peach orchards have never recovered from the exterminating cold of a few years since.

The first nursery in the county is said to have been planted by the Osbornes, at their settlement in the town of Calvin, during the year 1835 or 1836. A nursery was also commenced and conducted by B. Hathaway, of Little Prairie Ronde, as early as 1840, which is still continued.

The brothers B. G. and E. Buell, of Volinia, planted a large commercial orchard in the year 1851, a portion of which was set with Northern Spy and top-grafted with Red Canada cions. A portion of the trees of some of the less hardy varieties have been seriously injured during some of the subsequent exceptionally severe winters; still, the orchard is understood to have been a profitable one, and more or less of it yet remains in a productive condition.

B. Hathaway, of Little Prairie Ronde, has for many years given more or less attention to the growing of orchard fruits for market, as well as to the testing of new fruits generally. He has, also, for many years, devoted much time and attention to the origination of new varieties of strawberries, resorting, for this purpose, to our native American stock. Among his originations we note Pistillate Scarlet, a seedling of his from the old Virginia Scarlet. Using this as the basis of his experiments, he has, from it, originated the Pomona, the Michigan, the Bidwell, and several other varieties of decided merit not yet named or disseminated. His experiments have, in fact, been already so long conducted in this single line that he may fairly be said to have produced a race or family of strawberries possessed of distinctive race characteristics which manifest themselves with a marked persistency in nearly or quite all the more recent originations of this strain.

While a batch of Mr. Hathaway's seedlings of this strain were in fruit he was visited by a Mr. Bidwell, at that time a resident of South Haven, Mich., who was so highly pleased with them that he purchased a single plant of each of ten of them, at the price of \$1 each, among which was the one since known as Bidwell. These were propagated, fruited and exhibited, and allowed to pass as seedlings of his own origination.

At a meeting of the Michigan State Pomological (now Horticultural) Society, held at South Haven in June, 1877, Mr. Bidwell exhibited very fine specimens of this variety, under the name of Centennial.

A member of the examining committee on that occasion, who had received plants from Mr. Hathaway for trial, recognized this as one of them, and so stated to the society; but the matter was not followed up at the time, and the variety was locally disseminated under that name.

The South Haven Pomological Society subsequently, under the apprehension that Mr. B— was the actual originator, rechristened it "Bidwell," to avoid complication with a previously named Centennial.

It was only after the variety began to attract attention abroad that, upon the appeal of Mr. Charles Downing and E. P. Roe, T. T. Lyon applied to Mr. Hathaway and learned the facts as stated.

A county agricultural society was organized August 17th, 1850, which has doubtless contributed greatly to the development of horticultural taste and practice; and the same is doubtless true of the Volinia Farmers' Club, which was organized in 1865, and which has constantly given much of its influence to the promotion of fruit culture, as well as to horticulture generally.

B. Hathaway, of Little Prairie Ronde, contributed a collection of apples to the exhibit of fruit made by the State Pomological Society, in September and October, at the Centennial Exposition at Philadelphia.

In 1871 Mr. Hathaway was awarded the first premium by the orchard committee of the State Pomological Society, for ornamental grounds attached to a farm residence.

In 1872 the citizens of Dowagiac established, laid out and commenced the ornamentation of a cemetery embracing twenty-two acres of land, beautifully located on a rising ground south of the corporation.

A portion of the ample grounds donated to the railroad company for depot purposes is set aside and ornamented as a public park.

B. Hathaway, in 1873, devised and described, at a meeting of the State Pomological Society, at Lansing, a new form of a trap for collecting and destroying the larvæ of the codling moth, so injurious to the apple crop. It consists in substituting thin wooden bands for those of cloth or paper heretofore employed. The orchard products of Cass county for the year 1870, as reported by State authority, were valued at \$109,689.

In 1875, Mr. Hathaway detailed the result of an experience of a series of years in the planting and management of pears, with the conclusion that the occasional severe winters of interior southern Michigan are almost certainly fatal to success with this fruit—certainly so in his locality. Also that dwarfs are valueless there, unless so planted as to induce the emission of roots from the pear, above the quince stock.

At the same meeting Mr. Hathaway explained his mode of managing the Iowa grape, by which he is enabled to secure satisfactory and profitable results where other modes of treatment are usually unsatisfactory.

B. Hathaway is reported as the sole contributor from Cass county to the State Pomological Society's exhibit of fruits at the Centennial Exposition.

Secretary Garfield, in his "Brief of Horticulture in Michigan," says: "Cass county contains rich farming lands, and upon a majority of farms the apple orchard is an important attribute. Peaches are little grown for market, but all other northern fruits flourish, and the proximity of Chicago markets, with direct transportation over the Chicago & Grand Trunk and Michigan

Central railroads, renders this an attractive region to the commercial orchardist, as well as to the amateur."

Cass county, according to the census of 1884, has of

Apple orchards, 6,990 acres, 241,504 bearing trees, yielding in 1883, 70,929 bushels of fruit.

Peach orchards, 223 acres, 4,044 bearing trees, yielding in 1883, 40 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$35,632.00.

Vineyards, 30 acres: grapes sold in 1883, 24,645 pounds.
wine made in 1884, 139 gallons.

Nurseries, none.

Market garden products sold in 1883, \$4,046.00.

BERRIEN COUNTY.

As has been heretofore stated, the Jesuits, Claude Dablou, James Marquette and Claude Allouez, who had, in 1668, founded a Catholic mission among the Indians at Sault Ste. Marie, are supposed to have circumnavigated Lake Michigan during the following year, ascending the St. Joseph river a considerable distance, and giving it the name Miami, doubtless from the name of the Indian tribe then inhabiting its banks. It seems doubtful, however, if a permanent establishment of the whites was effected till the arrival of Robert De LaSalle, in November of that year. The Jesuits are supposed to have founded a mission and built a fort or trading-post here about the year 1679. This mission and trading-post are understood to have been maintained until the conspiracy of Pontiac, when they fell a prey to the Indians under his instigation, on the 6th of May, 1763.

About 1775 a Mr. Burnett established a trading-house near the mouth of the St. Joseph, which was maintained till about the year 1825. According to the History of St. Joseph, published by Damon A. Winslow in 1869, there was then standing, about one mile above the mouth of the river, on the lands of Captain Samuel G. Langley, an old apple orchard, believed to have been planted by Mr. Burnett.

In the autumn of 1822 the Carey mission was established by Rev. Isaac McCoy, under the auspices of the Baptist Board of Missions, at a point one mile west of the present city of Niles. The advance party consisted of twenty-two persons, who were followed, in December, by the mission family and its attendants, thirty-two in number, and steps were at once put in progress to provide for the sustenance of those connected with the mission. Among other things, an orchard was planted at an early date, which is supposed to have been the first in eastern Berrien.

A. B. Copley, of Decatur, Van Buren county, in a paper read at the annual meeting of the pioneer society, June 7th, 1882, states that a Mr. Thompson came into eastern Berrien in 1823, he being the earliest settler in that locality aside from those connected with the Carey mission.

In the spring of 1825 Benjamin Potter and wife settled one mile north of the present city of Niles, and the same spring Wm. Baldwin Jenkins, with

no implement but a hoe, planted a small patch of corn on what was then known as the "old Indian fields." John Lybrook, during the same spring, also planted eleven acres of corn on this tract. During the following summer, the Jenkins already named (a subsequent settler in Cass county), with a companion named Coon, explored the St. Joseph river to its mouth, to determine its navigability, arriving there on July 3d, and celebrating the 4th by a successful fishing excursion. At this time, aside from those connected with Carey mission, there are believed to have been but seven actual settlers in eastern Berrien. During the autumn of 1825 John Lybrook sowed one barrel of wheat, which he had brought from Ohio with an ox team hitched to the hinder wheels of a lumber wagon. This is supposed to have been the first crop of wheat sown in southwestern Michigan. As late as December 25th, 1829, there were said to have been but two or three log cabins where is now the city of Niles.

On September 28th, 1828, Lewis Cass and Pierre Menard, as commissioners on behalf of the United States, concluded a treaty with the Pottawattomie Indians, by which the latter ceded to the United States the western portion of the lands within the then Territory of Michigan lying west of the St. Joseph river.* The lands included within the village of St. Joseph were preëmpted by Calvin Britain and Augustus B. Newell, who, upon their survey by the government, perfected their title by purchase.

The county was set off, with its present boundaries, by act of the Legislative Council of the Territory, approved October 29, 1829, and named Berrien, in honor of John M. Berrien, attorney general under President Jackson.

The county seat was for a short time at Niles, and subsequently at St. Joseph, then called Newberryport. Finally, by an act of the State Legislature, the county seat was fixed at Berrien Springs, from and after May 1st, 1836.

The planting of orchards and the growing of fruits, for the supply of the family, may very properly be said to have taken its rise, so far as Berrien county, as a whole, is concerned, with the first settlement of the county; although the rise of this interest as a commercial pursuit is of somewhat more recent date. It is also true that while the apple is quite generally grown, in quantities quite in excess of the home demand; usually affording a considerable surplus for exportation; nevertheless, the wonderful modern development of the commercial phase of this interest has been confined to a comparatively limited portion of the county, in the more immediate vicinity of St. Joseph and Benton Harbor, in near proximity to Lake Michigan; and has moreover, been consequent upon the unparalleled growth of the great cities of the northwest.

In his history of St. Joseph, at page 47, Mr. Winslow says: "In the orchard set out by Mr. Burnett, he set several peach trees, and they were still there in 1829, and for several years subsequent; but, being on interval land, they were subsequently killed, in a season of extraordinarily high water. There is now, (1869) a peach tree, in the old orchard, just south of Hickory creek, on the Niles road, that is over thirty years old; and, last year, it bore a fair crop of fruit; yet the tree has had no special care for many years. There were peach trees scattered through the country, prior to the year 1848, but they were all seedlings. Prior to this date, it is not known that there was a budded peach tree in the county."

In January, 1873, L. J. Merchant, of St. Joseph, published a "Catalogue of

Fruit Growers and Shippers," for that entire region; prefacing it with a short history, from which we quote:—

"B. C. Hoyt, Esq., banker, of St. Joseph, one of the oldest residents, coming here in 1829, states that he found a seedling peach, planted by old William Burnett, who had been dead over twenty years. That tree lived and bore fruit for ten or more years thereafter. The first peaches ever sent to Chicago market came from Mr. Hoyt's garden in 1839, on the bluff, on what is now (1873) the property of E. M. Edwards, Esq. They were seedlings; and were bought by the cook of the steamer——, were packed in barrels, and taken to Chicago on speculation.

"Simeon Wilson, another pioneer, who is still living here, and a large fruit grower, says the Burnett orchard, now owned by the Langley estate, had seedling peaches when he settled here, in 1831. As soon as the first settlers made their clearings they planted apple seeds and peach pits, and nearly every one had a few seedling trees.

"Peach culture was of slow growth, attracting very little attention in the days of no cities, remote settlements and sparse population. Before peaches were sold in Chicago from this region, even before St. Joseph could supply itself with fruit, Mr. Brodiss, who lived six miles this side of Niles, brought his seedling peaches, by the canoe load, down the St. Joseph river to peddle in St. Joseph. This was in 1834. About this time a family named Abbe entered and made a settlement on the east end of the tract of land, the west end of which is now occupied by Benjamin Williams. They set out a lot of improved peach and apple trees, which friends in Rochester provided to plant in the new country. The orchard was set near the Gard school-house. When the Abbe place was abandoned the peach trees were transplanted to Royalton, on the land now occupied by Messrs. Curtis and Noble Martin. Fruit was brought from them to St. Joseph in 1837. The apple trees were removed to the orchard of Stone Bronson—the first, we believe, in that township.

"Captain Curtiss Boughton settled in St. Joseph in 1834, his father, Gaius Boughton, in 1837. The son bought peaches by the barrel and dry goods box, in 1840, carried them on his vessel and sold them in Chicago, making enormous sums of money. Captain Boughton has sold peaches at the rate of \$45 per barrel. This gave the whole country the peach fever, and the whole lake shore, from New Buffalo to the extreme north, has been catching it ever since. Gaius Boughton and Mrs. Boughton produced the peaches, and Captain Boughton sold for the whole country.

"Mr. Hoyt states that, in 1842, he procured from Long Island buds of improved varieties, to start a nursery. No improved fruit went to Chicago until after 1844, when he sent over a few baskets of Crawfords, which the boys peddled out at ten cents each. After 1845 the shipment of choice fruit began to increase, beginning with a few hundred baskets (three pecks), and reaching several thousand in 1855, when a great many Crawfords were shipped. They generally sold the fruit in St. Joseph, for \$3 per basket, to buyers for the Chicago market. He had a tree which he set in 1842 which bore fruit last season (1872). In 1841 the sleet killed all the buds of seedling trees, and that is the only year, up to the present time, that he has been without peaches.

"The Hon. H. C. Morton, of Benton Harbor, who, in 1835, located on the farm now occupied by him, says: 'The first peaches were seedlings. Craw-

fords were first introduced by B. C. Hoyt, Esq., who obtained buds from Prince, of Long Island, and started the first nursery. Before this L. L. Johnson set an orchard, from trees unclaimed at the warehouse, on lands near where the residence of Mr. Charles Hull now stands, north of the St. Joseph river.' This orchard, we learn, is now the property of H. R. Lobough. 'Captain Boughton took our first peaches to Chicago in barrels, paying for them at the rate of \$1.25 per bushel. The second year I sold to a commission man in Chicago, for \$2.50 per basket, which held three pecks. The next year I sold to Newhall for \$3 per basket. It would take the full contents of one of our present baskets to round up one of those first baskets. We covered them with cotton cloth. No great quantity was shipped until the captain's orchard began to bear. In the early time there was no loss of any crop, except once, by a frost in June, which froze apples when as big as walnuts. I had no peaches then. The first trees I set grew rapidly. I had several that bore three pecks each, three years after the setting. They were the blood peach. Some of the trees I set out then are still alive and bearing.'

"Mr. George Parmelee, now of Traverse (deceased in 1885), who came to this county in 1845, put out his first trees in 1848 in the town of Benton, north of the Paw Paw river, setting two acres of budded trees. He subsequently enlarged his orchard until it covered about ninety acres. Samuel Jackson now owns the pioneer orchard of Mr. Parmelee, in which are some of the largest and finest peach trees in the county.

"In 1849 Captain Boughton set out 130 budded peach trees, in St. Joseph township, south of the St. Joseph river. In 1850 he shipped 250 barrels of seedlings and 150 barrels of improved varieties, twice a week. The shipments for the year were, by his vessel alone, not less than 10,000 baskets. Captain Boughton states that the first barrel of improved peaches he handled came from an accidental tree, on the Conger, afterward Chauncey, now Sterne Bronson place in Benton. He bought it (the fruit) with seedlings, for the same price. On opening, and discovering its quality, so many Chicago commission men wanted the barrel, that he sold it at auction, for \$8. In 1852 the captain set out twelve acres more of fruit.

"The Cincinnati peach orchard, containing sixty-five acres, now owned by S. Perkins and D. H. Sheldon, of Chicago, was set out in 1857; and was once the largest peach orchard in the State.

"From this time the fruit interest commenced to grow rapidly, as one after another settled here and went into the business; and, in 1865, a canvass was made, which showed the names of about 250 persons engaged in fruit raising. Now, in 1872, our canvass shows over 800.

"Only a few years ago, this section of country was generally covered with heavy timber; now it is an almost unbroken mass of fruit trees and vines. Then there were only a few roughly constructed houses, where dwelt the hardy pioneers; now the country is thickly dotted with handsome residences, the abodes of wealthy fruit growers, and millions of dollars are invested in the business of fruit culture."

Damon, in his history of St. Joseph, at page 55, states that when fully improved, with a fine residence and corresponding out-buildings, the farm of George Parmelee, already mentioned, was sold for the sum of \$43,000; and he further states the following:—

"Messrs. Boynton and Alexander in 1865, from one and one-half acres of

blackberries of two and three years' growth, after deducting expense of picking, packing, transportation and commission on sales, received the snug sum of over \$1,800, or over \$1,200 per acre, the yield being about three hundred bushels of berries.

"S. F. Heath, of Heath's Corners, purchased of H. W. Guernsey a lease of five acres of peach orchard, the lease having six years to run, for \$800, Mr. Guernsey to have the first succeeding crop. Mr. Heath afterward purchased the land, subject to the lease, for \$500. Mr. Heath's fruit crop brought him \$1,800. He then sold the five acres to Wm. Gates for \$7,000, all the peaches being on the five acres. Mr. Heath paid Mr. Gates \$2,000 for the next crop after the sale, and Mr. Gates received for the next crop, being the crop of 1868, \$4,000, with good prospects for a greater crop the following year.

"Mr. E. D. Harmon, of Benton, in 1868, from one and one-fourth acres of strawberries, picked 194 bushels of berries, which netted him \$718.19.

"Mr. W. J. Nott, in the same year, from fifty-four Delaware grape vines, the fourth year after setting, picked five hundred pounds of grapes. His Concord and Hartfords, of the same age, paid him about \$450 per acre.

"Mr. Z. Rice, on the lake shore road, in 1867, from one hundred and nine vines, making one-eighth of an acre of land, picked 4,200 pounds of Concord, Isabellas and Catawbas. In 1868, from 300 trees, Mr. Rice picked 1,782 baskets of peaches, the trees occupying less than two acres.

"Mr. Carley, four years ago, purchased forty acres with eleven acres of peach orchard for \$5,000; paid \$1,500 down. The first year after his purchase he cleared from his peaches \$2,800. He has since paid for his place, has money left, and is now independent, all of which, except the \$1,500, he made from his peaches."

The following, from Mr. Parmelee, we give entire:—

FRIEND WINSLOW.—Agreeably to your request I herewith transmit a few facts relating to the *field* culture of small fruits in my neighbourhood the past year

The following facts were communicated to me by the cultivators themselves, who are men of good reputation, who live on one road, and whose lands are adjoining:—

Mr. U. Osborn, from one and one-quarter acres of strawberries, sold 230 bushels for \$800, used thirty bushels (by estimation) for canning, etc., and lost about one hundred bushels for want of pickers.

Mr. C. Drupstein, from three-fourths of an acre, on which is a small house, seventy peach trees two years old, and fifty grape-vines, sold one hundred and seven bushels of strawberries for \$137.

Mr. Grady, from three-eighths of an acre strawberries, sold sixty-five bushels for \$290.

Mr. Jones, from seven-eighths of an acre of strawberries, on which ground stands ninety peach trees, sold one hundred and ten and one half bushels for \$388. These last were planted very wide.

On neither of the four pieces was there any mulching or manuring of any kind. All the above estimates were after deducting freight and commission on sales. Only the first gave an estimate of the quantity put up at home, but all fruit growers have "a tooth for good things," the proof of which saying is in stopping for tea.

It is fair to state that this is a specimen of *field* culture, no more. When extra care has been given three hundred bushels to the acre has been realized. I could cite you to several others in the same neighborhood who have attained the yield of three hundred bushels per acre, or nearly that, on extra rich soil, or by mulching or manuring or both.

With regard to the yield of blackberries and raspberries the past season I am not posted.

As to specimens of what can be done in peach growing I give the result of a block of trees, on the farm now owned by Mr. S. Jackson, raised in 1865—the last season it was owned by me. Forty-one Early Crawford trees produced a few baskets over eleven hundred, and sold for \$2 per basket, amounting to \$2,200. The trees were twenty feet apart each way, which puts one hundred and nine trees on an acre, and makes the yield at the rate of \$5,818 to the acre. This, of course, is given as an extreme result, but if any man thinks that peach growing in this region is not profitable, let him call on our fruit growers and get facts.

I do not believe there is another region in the United States that can show as good results.

Yours truly,

GEO. PARMELEE.

From page 37 of Winslow's History we quote the following statistics, which we suppose to have been compiled from results of the crop of 1869:

The following table will show very nearly the amount of land in the immediate fruit region set to fruit, and the number and amount of the different kinds thereof. This table is compiled from the reports of committees appointed by the Fruit Growers' Association, for the express purpose of collecting these statistics:—

	Trees.	Acres.		Trees.	Acres.
Peaches.....	352,530	2,952	Quinces.....	4,988	33
Pears.....	56,519	758	Grapes.....	91,208	204
Plums.....	9,786	502	Strawberries.....		460
Cherries.....	17,654	125	Blackberries.....		719
Apples.....	195,995	2,958	Raspberries.....		603
Total.....					9,314

In October and November, 1872, a full and accurate canvass of eight of the principal fruit growing townships was made by L. J. Merchant, a summary of which we extract from page 53 of his pamphlet, already spoken of:—

Townships.	Acres in fruit.	Acres straw-berries.	Acres rasp-berries.	Acres black-berries.	Number of grape-vines.	Cherry trees.	Peach trees.	Pear trees.	Apple trees.	Plum trees.	Quince trees.
Benton.....	3,173½	214½	109½	134	32,110	5,427	204,721	10,935	67,092	1,223	1,453
Bainbridge.....	832½	6½	4½	3½	736	479	29,185	928	28,693	23	300
Hagar.....	626½	26½	12½	5½	4,847	2,694	40,195	1,600	15,970	526	231
Lincoln.....	1,973	288½	103½	223½	35,154	4,092	140,987	11,108	23,567	2,327	4,631
Royalton.....	623½	37½	8½	28½	3,030	671	45,140	4,098	20,685	324	1,214
St. Joseph.....	1,221½	71½	33½	106½	31,210	5,013	96,008	17,168	23,514	2,860	5,103
Sodus.....	312½	10½	2½	2½	1,167	508	17,724	771	8,330	20	172
Watervliet.....	462½	1½	¾	1½	1,331	471	20,447	913	18,785		
Totals.....	9,254½	656½	273½	505½	109,636	19,351	594,467	47,621	211,636	7,503	13,094

As a means of indicating the exceedingly rapid growth of the fruit interest in this region at this period, we append the abstract of a canvass of this same region in the years 1865 and 1869, three and seven years prior to that already given, which, without specifying localities, gives the totals as follows :—

Year.	Acres of Straw-berries.	Acres of Rasp-berries.	Acres of Black-berries.	No. of Grape Vines.	Cherry Trees.	Peach Trees.	Pear Trees.	Apple Trees.	Plum Trees.	Quince Trees.
1865.....	79¼	14	27½	32,215	9,037	201,603	39,741	62,421	2,643	2,505
1869.....	460	603	719	91,208	17,654	335,530	56,519	195,995	9,786	4,988

In December, 1886, the Detroit Tribune (upon what authority is not known) states: “Last year the fruit and farm produce shipments of St. Joseph and Benton Harbor aggregated \$1,250,000; this year they reach \$1,500,000.”

In December, 1877, Mr. John Whittlesey, of St. Joseph, reports the following fruit shipments from Berrien county:—

BY WATER.

Barrels, apples.....	75,882
Half-bushel crates, strawberries.....	128,840
Half-bushel crates, raspberries.....	40,771
Half-bushel crates, blackberries.....	14,876
Half-bushel crates, cherries.....	6,945
Quarter-bushel baskets, grapes.....	43,563
Third-bushel cases, grapes.....	5,731
Quarter-bushel baskets, quinces.....	700
Baskets, peaches.....	422,225
Add for various kinds of fruits not classified.....	6,000

BY RAILROAD.

Baskets, peaches, pears, and grapes.....	65,333
Crates, berries.....	25,478
Barrels, apples.....	8,038

Besides large quantities of peaches taken to Indiana by wagons.

In 1854, Timothy W. Dunham, who for a considerable period conducted a nursery business in Kalamazoo, removed to St. Joseph, where he planted a large orchard of peach and apple trees, and also a peach nursery, which for years was the main source of supply for the vicinity.

The Berrien County Agricultural Society was organized on March 13, 1850. A society known as the North Berrien and Michigan Lake Shore Agricultural Society was also organized in 1871.

On the 25th of February, 1871, by invitation of the Berrien county Horticultural Association, at a meeting held at the Congregational church, W. B. Ransom, of that place, read an essay, in the course of which he described his process of trapping the curculio, by leveling and compacting the surface of the ground immediately about the trunk of the tree, and placing thereon,

immediately in contact therewith, "small pieces of bark, blocks, or anything flat with a surface of from two to four inches." These traps were to be placed about the tree, toward evening, and to be examined in the early morning, when the insects are to be found attached to their under sides, and may be readily collected and destroyed.

This "trap" was the outcome of the observations and experiments of Mr. Ransom during the previous two years, and seems to have also been successfully tried within that period by more or less of his neighbors.

This discovery, at the time, attracted a good deal of attention, among both fruit growers and entomologists, and was very widely tested, apparently with varying success. Among others, the late Dr. Hull, the noted fruit grower and writer of Alton, Ill., and Prof. C. V. Riley, formerly State entomologist of Missouri and now of the Agricultural Department at Washington, visited Mr. Ransom and carefully examined the process, which seems not to have altogether commended itself to their confidence, since both subsequently raised the objection that, however efficient it may be found early in the season, with the advent of warm nights the insect remains upon the tree, refusing longer to avail himself of the protection of the "trap."

Mr. Ransom, however, in the course of his essay, claims that failures may result from want of a proper preparation of the surface, or from lack of efficiency, and that a thorough and persistent use of his traps, if it does not, in fact, exterminate the "little Turk," will go very far towards saving the crop of fruit.

As early as 1871 the larvæ of the codling moth had become very troublesome in the orchards of western Berrien, and Mr. W. A. Brown had practiced the placing of rags, as decoy traps, in the infested trees, and, after a few days, when the larvæ had taken possession of them, destroying them by passing the whole through an ordinary clothes-wringer, a device soon after modified by the placing of cloth or paper bands around the trunks of the trees for the same purpose.

About the year 1862 the disease known as yellows was introduced among the peach orchards of the county, and in April, 1872, a report of examinations made at Benton Harbor and St. Joseph by Prof. R. C. Kedzie, of the State Agricultural College, was made to the State Pomological Society, at a session held at Lansing in April, 1872. The orchard committee of the society, who visited this region early in the following September, also found decided manifestations of the disease in all directions, extending as far north as Watervliet and Paw Paw lake, and learned that it had probably existed in the vicinity since the year 1866. Various modes of treating the malady had been tried, nearly or quite all of which were in the direction of fertilization for the renewal of vigor, as the means of suppressing the disease, but nothing seems to have proved permanently effective short of digging up and destroying the trees, and, with them, the disease, which, more recently, has generally been done.

In June, 1872, the State Pomological Society held a meeting at Benton Harbor, where they were received in a fine hall beautifully ornamented with evergreens, plants and flowers which, with a large local attendance, rendered the occasion one of much interest.

At an early date a fruit plantation was commenced in the eastern portion of the county by Bort, Moody & Son, which, for some unexplained reason, was discontinued. William Bort (of this company), who was long a prominent horticulturist of Niles, died at that city in 1876.

Silver Brook cemetery, at Niles, commenced many years since, and enlarged and improved from time to time to meet the increased requirements of the community, is reputed to be a very beautifully kept and creditable institution.

In 1875 B. M. Hance settled at or near Niles and commenced an extensive small fruit plantation, which he still continues.

S. H. Comings, of St. Joseph, who, several years previously, had commenced a cranberry plantation upon a marsh a few miles south of that city, near Stevensville, picked from one acre of the same, in the autumn of 1877, four hundred and fifty bushels of fruit.

In 1878 the fruit growers in the vicinity of Benton Harbor and St. Joseph organized the Michigan Lake Shore Fruit Growers' Association. On August 21st, 1880, the Berrien County Horticultural Society was organized, which seems to have absorbed or taken the place of the foregoing. This was made auxiliary to the State Pomological Society, which relation has been continued to the present time.

Mr. John Whittlesey, of St. Joseph, has long been prominently known as an extensive vineyardist of that place, who has been experimenting to determine the influence of increased space and less severe pruning upon the vigor, health and fruitage of our native grapes. In the course of his experiments he has, in some cases, allowed a single vine to fill a space of nearly or quite one hundred and fifty feet, and this, with apparent benefit to the plant, so far as vigor and productiveness are concerned, and certainly without injury to the quality of the fruit.

The following premiums, offered by the State Pomological Society, were awarded to residents of this county by the orchard committees of that society for the year 1872:—

To R. C. Winans, of Benton Harbor, first premium for apple orchard; also for Delaware vineyard.

To S. Jackson, Benton Harbor, second premium for peach orchard.

To H. F. White, Benton Harbor, third premium for peach orchard.

To A. R. Nowlen, Benton Harbor, third premium for peach orchard and second premium for vineyard.

To J. Young, Coloma, first premium for cherry orchard.

The orchard committee for 1875 awarded the following:

To Thomas Archer, St. Joseph, first premium for plat of blackberries; also for best vineyard attached to a city residence.

To Thomas Archer & Co., first premium for nursery of grape-vines.

To John Whittlesey, St. Joseph, first premium for vineyard for profit.

The following persons contributed to the exhibit of fruits by the State Pomological Society at the Centennial Exposition in September and October, 1876:

A. O. Winchester, St. Joseph, Salem and Diana grapes; John Whittlesey, St. Joseph, Agawam, Wilder, Northern Muscadine, Concord, Ives, Rebecca, Hartford and Iona grapes; John Maitland, St. Joseph, Martha grapes; Thos. Archer, St. Joseph, Delaware grapes; John Irwin, Buchanan, apples.

The Centennial judges of pomology report as follows, so far as the fruits of this county are concerned:

A. O. Winchester, St. Joseph, twenty-five plates of grapes, mostly Concord, Clinton and Delaware, all good, and Diana extra fine.

J. Whittlesey, St. Joseph, eight kinds of grapes, Rebecca very good, Concord very good, from the trellis the vine extending forty-eight feet.

The disease of the grape known as "rot" has for several years been becoming increasingly troublesome in this county, with most varieties of grapes, Ives, Delaware, and perhaps others being comparatively exempt, while the Rogers Hybrids, Catawba and Concord yield more readily to the attack. Several remedies, or rather preventives, are found more or less effective, among which are bagging, sulphur, sheltering from rain and dew, and picking and destroying the diseased fruit; but no economical, convenient and effective remedy has yet been devised.

The importance of an effective combination as a restraint upon carelessness and fraud in the packing, handling, transportation and marketing of fruits had long been felt, and as the outgrowth of such feeling meetings of those interested were held, resulting in the perfecting of an organization, at Benton Harbor, on May 15th, 1886, by the adoption and signing of the following constitution and by-laws:—

ARTICLE 1.

The name of this association shall be Michigan Fruit Exchange.

ARTICLE 2.

Its object shall be the advancement of the interest of its members by encouraging and promoting a better system of packing and grading fruit, whereby the quality shall be guaranteed to the purchaser.

Its headquarters shall be at Benton Harbor, Michigan.

ARTICLE 3.

The meetings, after the first election of officers, shall be held annually on the second Monday in March, and special meetings may be convened at any time on the call of the president—the hour and place to be named by the executive board.

ARTICLE 4.

There shall be elected annually by ballot, by members of the Exchange, one president, three vice-presidents, one secretary, one treasurer and five trustees to manage the affairs of the same, who shall hold their term of office for one year, or until their successors are duly elected.

ARTICLE 5.

The constitution may be altered or amended at any regular annual meeting, by a vote of two-thirds of the members present, or at any special meeting, provided that at least ten days' previous public notice shall have been given: and ten members shall constitute a quorum.

BY-LAWS.

ARTICLE 1—SECRETARY AND TREASURER.

The office of Secretary and Treasurer may be held by one person as the members may determine by ballot. The Treasurer shall pay no moneys except on orders signed by President and Secretary.

ARTICLE 2—EXECUTIVE BOARD.

All officers elected by members of the Exchange shall constitute an Executive Board and may act on all questions that pertain to the interest of the Exchange, as the statute provides in similar organizations.

ARTICLE 3.

The Executive Board shall have the general business management of the Exchange and may appoint an inspector and manager, and all other business or financial agents thereof, and provide such rules and regulations for their guidance as the interest of the Exchange may require.

ARTICLE 4—BOARD OF ARBITRATION.

There shall be a board of arbitration consisting of three members, the President being ex-officio a member of said board, which shall be appointed by the Executive Board, from members of the Exchange, whose duties shall be to settle all differences arising within the Exchange.

ARTICLE 5—MEMBERSHIP FEE.

The membership fee for the first thirty members of the Exchange shall be \$2.00. The amount of fee to be paid by an additional member shall be determined by the Executive Board.

ARTICLE 6—SHIPPER'S BRAND.

All members of the Exchange shipping under the Exchange brand shall have their full name stamped upon the package of fruit or any article shipped under the Exchange brand.

ARTICLE 7—MEMBERS SHIPPING.

No member shall be allowed to ship under the Exchange brand without the Inspector's brand stamped upon the package, crate, or barrels to be shipped.

ARTICLE 8—MEMBERSHIP.

Any person may become a member of the Exchange by a two-thirds vote of the members present at any meeting on the presentation of his application by the Secretary, accompanied by the regular admission fee therefor.

ARTICLE 9—COMMITTEE ON FINANCE.

There shall be a committee on finance consisting of three members appointed by the Executive Board from the trustees, who shall audit all bills, and no bills shall be paid without being audited by said finance committee.

ARTICLE 10—TREASURER'S BOND.

The Treasurer shall execute a bond with good and sufficient securities, the amount of bond and security thereon to be determined by, and be satisfactory to, the Executive Board.

ARTICLE 11—AMENDMENTS.

These by-laws may be altered or amended by a two-thirds vote of members present and voting at any regular or special meeting of the Exchange; provided that at least ten days' previous public notice shall have been given.

With the immense amount and the great variety of fruits grown and shipped from the county, and especially from the vicinity of the harbor of St. Joseph, the supplying of the needful packages grew to be a business of much magnitude. The following are some of the enterprises established from time to time to supply this need:—

L. Carpenter & Co., fruit baskets and packages, Benton Harbor, 1866.

C. Colby, fruit baskets and packages, Benton Harbor, 1866.

Ingham, Leslie & Co., fruit packages, Benton Harbor, 1870.

Excelsior Packing Co., established in 1870, became the Victor Packing Company in 1873, Benton Harbor.

Alden Evaporating and Canning Co., Benton Harbor, 1877.

Michigan Basket Factory, St. Joseph, 1867.

Wm. R. Wilcox & Co., fruit package and veneering, St. Joseph, 1864.

Berrien county, according to the census of 1884, has of apple orchards, 14,356 acres, 468,379 bearing trees, yielding in 1883, 209,011 bushels of fruit.

Peach orchards, 503 acres, 26,419 bearing trees, yielding in 1883, 598 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883, was \$128,171.00.

Vineyards, 833 acres: grapes sold in 1883, 493,035 pounds.
wine made in 1883, 677 gallons.

Nurseries, 14 acres; products sold in 1883, \$1,427.00.

Market garden products sold in 1883, \$35,671.00.

 WAYNE COUNTY.

The French inhabitants along the eastern border of Michigan had the tradition that the early French missionaries brought cions and trees from Normandy; and that they planted seeds and trees, near their rude cabins, along both sides of the river, from Monroe to Mt. Clemens. In a paper read at the meeting of the State Pomological Society, held at Battle Creek, in February, 1873, J. C. Holmes, of Detroit, says: "I have seen it stated that several pear trees were brought from France, in the year 1749, and planted along the river side, from the Brush to the Witherell farm, in Detroit, a distance of nearly one mile. How correct this statement may be I do not know; but it seems to be a well ascertained fact that, in no other locality in this country, can such trees be found as the ancient pear trees that are now standing on the banks of Detroit river. It is not unusual for them to bear a crop of thirty to forty bushels each."

In a paper read by Edwin Willits, at a meeting of the State Pomological Society, held at Monroe, June 30th, 1874, he contributes a few facts bearing on this subject, as follows: "Old Francis Navarre, led by the spirit of adven-

ture, and the companionship of many comrades of like sentiments, coasted along the lakes in his dug-out canoe, till he came to the straits, 'D'Etoit,' as they called them; but we have so anglicised the name that it has lost its original significance. There he found a fur trading station, a French military post, a missionary centre and a few settlers—old soldiers, who had taken up lands and turned their spears into pruning hooks. Francis Navarre was an educated man; and, at one time, was the scrivener for this little colony on the outposts of civilization.

"At the time he came to the straits a single pear tree which, in 1805, was said to be one hundred years old, stood within the pickets with which the town was surrounded, where now commerce and capital thrive, and the hum of a busy industry makes vocal the impulse of teeming thousands; and there it stood, till it fell before the rapacious growth of the metropolis. From this tree, Francis Navarre, when he had selected his claim, fronting the straits, transplanted two sprouts in his yard."

Twenty years later these had grown to be large trees, and supplied the sprouts which his son planted on the banks of the Raisin, and which are to-day known as the "Old pear trees of Monroe."

Congress had, in 1787, organized the whole region lying northwest of the Ohio river into a Northwest Territory.

On August 11th, 1796, by act of Congress, Wayne county was established, to include all of Michigan, northern Ohio and Indiana, and part of Illinois and Wisconsin.

Subsequently, on November 21st, 1815, a proclamation of Governor Cass applied to this territory, so far as the Indian title had been extinguished, certain provisions of law relating to highways and road districts.

On September 10th, 1822, another and final proclamation was issued by Governor Cass, limiting the county to its present boundaries.

In the autumn of 1815 the Detroit city market building stood in the center of Woodward avenue, on the south side of Jefferson, with a whipping post at the northeast corner, where criminals were whipped for petty offenses. As recently as 1828, when the writer first came to Detroit, this building still stood in this position. It was a wooden building, boarded vertically, with strips four or five inches wide, with a considerable space between.

During the summer of 1818 the Walk-in-the-Water, the first steamboat built upon the upper lakes, visited Detroit, having been recently built. She was wrecked some years later.

Although the settlement of Detroit dates from the landing there of De La Motte Cadillac, on July 24th, 1701, it was not until after the war of 1812 with Great Britain, when the sovereignty of the region had become confirmed to the United States, and till the Indian title to the lands had been extinguished by treaty, nor yet until the necessities of commerce had supplied convenient facilities for transportation upon the upper lakes, that, with the earlier pulsations of that wonderful avalanche of emigration westward, an occasional emigrant found his way to the township of Plymouth, and to others adjacent, in which a few settlements were effected as early as the spring of 1825, although an occasional settler had located along the river Rouge and in the more immediate vicinity of Detroit at considerably earlier periods. Of these last, however, few authentic records are known now to exist. Within the township of Plymouth, William Starkweather, John Tibbits, John Vansickle, Roswell Root, Henry Lyon, David Phillips, Gideon P. Benton, A. B. Markham, and perhaps others, became residents during the year 1825.

William Woodbridge, one of the early governors of the State, at one time owned a farm which is now part of the city of Detroit. About the year 1824 or 1825, he purchased two thousand apple trees, together with a quantity of pear trees, of Grant Thorburn, of New York, from which he planted two large orchards on this farm. This importation included many, if not most, of the leading varieties of that period, although he added others from the old orchards on the Canada side of the river, the trees for which are reputed to have been imported from Montreal, in some cases at least, as early as 1796.

Respecting the origin of the old French orchards little is certainly known. On this point the following is quoted from a paper entitled, "The Early Colonization of Detroit," contributed by Bela Hubbard to the first volume of Michigan Pioneer Collections:

"The prevailing opinion that the pear and apple trees of the Canadas originated from seeds brought from France is founded on the supposition that nursery trees could not withstand the long sea voyage of that period. Yet this opinion cannot be accepted without hesitation. It is a law well understood by fruit cultivators, that trees raised from the seed of these fruits tend to revert to their original wild state. They are, with rare exceptions, inferior to the cultivated varieties, and, besides, are of almost as many different sorts as the seeds which produce them. Neither the pear nor the apple trees of the French orchards have the character of seedlings, and the fact that almost every orchard contained several trees of the same, and of noted kinds, militates against that supposition. On the other hand, it is improbable that they are seedlings raised here and grafted, for the art was then little practiced in America, and not at all among the Canadians." * * * "I am informed by an old resident that, in 1812 or 1813, he saw one cut down, which was in the way of a battery that was being built just above the city, and which measured nearly two feet in diameter of trunk. Such a growth could hardly have been acquired in less than a century. * * *"

"Appreciated by all, no one has thought of continuing the species, or else all attempts have failed. No young trees are to be found in the extensive plantations of the present century, which include so many vastly inferior. None of the nurseries contain it. It is even yet without a name in the dictionary of American fruit trees. Still, however, the pear trees flourish in a green old age while the apple orchards are fast disappearing, partly from natural decay, but more perhaps from neglect, while many are annually swept from existence by the relentless besom of modern improvement.

"The old pear tree belongs to Detroit and her old habitants, and will perish with them, and with their homesteads, which are so fast disappearing. Another half century will see the last of those magnificent trees, the pride of the French orchard, the mammoth of fruits of which the world does not afford the equal."

As among the French farmers along the river Raisin, so equally among their countrymen along the Detroit, nearly every family planted an orchard. The same was even more generally true of the more recent settlers of the interior who, coming as the most of them did, from the fruit-producing regions of New England, New York and adjacent States, with inherited tastes for fruit growing and in very many cases provided with trees, sprouts, cions or seeds for a renewal of the plantations left behind, made the planting of orchards the first business, as soon as suitable ground could be prepared. Among the earliest of these orchards were those of John Tibbits, Roswell Root, Henry Ward, Clark Griswold and others of Plymouth. John G. Welch,

of Livonia, Joseph Daines, of Redford, and numerous others. Those of Welch and Griswold were very extensive, having been planted mainly for commercial purposes, in which respect both were eminently successful. It is also true that in nearly all cases provision was made for far more than the needs of the family, the surplus being put up for market.

Located as the township of Plymouth is, upon the first and almost the only high, rolling land in the county as we pass westward from Detroit river, with strong, well-drained soils, it has proved well adapted to the growth of fruit trees, and has long been noted for the amount and quality of its pomological products.

Very many, if not, indeed, a majority of the earlier orchards of the county, and of the townships of Livonia, Plymouth and Canton in particular, were planted with seedling trees, at a time when nurseries were rare and grafted trees scarce and expensive. On coming into bearing these orchards were, in most cases, grafted with improved varieties—a work which in these towns was largely intrusted to Jabez Warner, a native of Connecticut, but at this time a resident of Plymouth; and he was, moreover, almost wholly trusted to select the varieties to be inserted. It is but justice to him, as an intelligent and conscientious pomologist of that early period, to state that to him more than to any, if not to all, others is the entire region indebted for the subsequent high character of its orchard products.

Almost at the outset of this grafting process some traveling grafters from Ohio grafted a tree in the orchard of John G. Welch, of Livonia, guaranteeing the grafts to be of Rhode Island Greening. When in bearing, the fruit proved to be a bright red apple, unknown to Mr. Welch, who stored it in his cellar with his other fruit. During the following winter this fruit was shown to a visiting friend from western New York, who identified it as Steele's Red Winter, evidently mistaking it for Baldwin, which at this time was generally known in western New York by this synonym. From this circumstance, and in ignorance of the fact of such previous appropriation of the name, this stray soon became currently and extensively known as Steele's Red Winter; and proving very valuable as a productive long keeper, it rapidly won an extensive notoriety in the eastern portion of the State, and was extensively employed by Mr. Warner in top-grafting the seedling orchards already spoken of—a position in which its naturally slender habit of growth was, to a considerable extent, overcome by the influence of the more vigorous seedling stocks. On account of its beauty and superior keeping and handling qualities, it became a highly popular late variety in the city markets of the west, under this pseudonym. The error remained uncorrected till the year 1848, at which time T. T. Lyon introduced this into his orchards of trial varieties, at Plymouth, and at the same time imported trees of Red Canada, the two when in bearing, by careful comparison, and by the sending of specimens of the fruit to the late Charles Downing for examination, proving identical.

The trial orchards of T. T. Lyon, above mentioned, were planted at intervals from 1847 to 1854 or '5, although preparations for them had commenced as early as 1843, by procuring a quantity of stocks, root-grafting and planting a small nursery, mainly with reference to the contemplated orchards. Mr. Jabez Warner was at that time engaged in the work of grafting the seedling orchards of that region; and cions for the purpose were largely obtained from him. It was soon discovered that varieties were, in many cases, duplicated under different names; and as a means of avoiding or correcting such

errors, some knowledge of the then crude subject of pomology seemed indispensable. Hearing of a stray copy of the then recent and rare original edition of A. J. Downing's *Fruits and Fruit Trees of America*, this was borrowed, and finally purchased, and carefully studied. From this, combined with careful observation, it was discovered that the public were quite as deficient in acquaintance with the subject as himself. These convictions, together with an inherent love of the pursuit, gradually grew into the purpose which finally developed into the extensive planting, fruiting and identifying of varieties—a work undertaken certainly with the hope that it might win a living; but, aside from that, with little expectation beyond the realization of a purpose to become familiar with varieties, and to aid in bringing order out of confusion. The pursuit of this purpose, sooner or later, brought him in contact and correspondence with such men as Downing, Warder, Elliott, Bateham, and numerous others, with whom varieties and information were freely interchanged; and drafts at will were freely authorized, and as freely made, for cions of rare varieties, from the trial grounds of Mr. Downing, from whom a very large proportion of these rarer trial fruits were obtained. Since about 1870 these orchards have passed into the hands of persons caring little or nothing for the purpose for which they were planted; and they are said to have sadly deteriorated, and to be already unfitted for the original purpose, as well as for profitable results in any direction.

In 1850 the farm committee of the State Agricultural Society awarded the premium to the farm of the late Jonathan Shearer, of Plymouth, who submitted, in substance, the following statement respecting its horticultural department: "There is an orchard of two acres on the farm, in full bearing, containing one hundred grafted trees. There is an apple nursery of some ten thousand trees, one thousand of which are grafted. There are also several varieties of pears and eighty peach trees. The most of these trees are in full bearing. There are twenty quince trees now bearing. There is a nursery of pears, peaches, plums and quinces, including many varieties."

In 1854, in entering his farm to compete for the premium offered by the State Agricultural Society, John S. Tibbitts, of Plymouth, specifies that he has one hundred apple trees, nearly all grafted with choice varieties; also thirty-six peach trees, twenty-five cherry, eight plum, six quince and one nectarine. The borer, wood-louse (aphis?) and codling moth are mentioned as the principal insect enemies. He is experimenting with salt and a wash of strong lye and soda for their destruction. His apples are almost free from worms this year. He cultivates his orchard, keeping down weeds and grass, raising little or no crops upon the ground, manures it bountifully, mulches with coarse manure and leached ashes, keeps the trees well trimmed, and washes them yearly with strong lye and soda.

The orchard committee of the State Pomological Society for the year 1871 awarded premiums to residents of this county as follows:

To J. W. Humphrey, Plymouth, first premium for pear orchard.

In 1833 William L. Woodbridge (son of Governor Woodbridge), while yet a school boy, commenced a small nursery, mostly of pears, upon his father's farm at Detroit which was in existence as late as 1836, soon after which it must have been closed to make room for the growth of the city.

A small nursery was commenced at Detroit by George Foster in 1841 which continued but a year or two.

In 1844 a nursery and greenhouse were commenced by William Adair and

George Foster, of which Mr. Adair subsequently became sole proprietor, and which he still continues.

Not far from this time, also, J. C. Holmes commenced a small nursery at Detroit which he continued for several years, till the space it occupied was required for the expansion of the city.

The nursery of Charles Hastings, which had been commenced at Troy, Oakland county, in 1836, was, several years subsequently, removed to Detroit, where it was conducted by Hastings, Hubbard & Davis; and later still, by Hubbard and Davis.

At an early date, probably between 1830 and 1840, Mr. Patchin commenced what was, for the time, a somewhat extensive nursery, in the township of Nankin; which was continued till near the time of his death, about the year 1860.

About the same period, or possibly earlier, and in the same vicinity, a nursery was commenced and continued for a short time, by the brothers J. F. & G. D. Chubb.

Jabez Warner also, during his residence of several years in Plymouth and Livonia, and in connection with his grafting, propagated and sold more or less root-grafted apple trees.

A small nursery existed near the village of Wayne in 1842 and 1843, which, however, continued but two or three years thereafter, the ownership having passed into the hands of Hubbard & Davis, of Detroit.

There are several cemeteries connected with Detroit, nearly all more or less denominational in character. Mentioned in alphabetical order they are:

Beth El, a Jewish cemetery, north of Woodmere, owned by Beth El Temple congregation. It lies on Lafayette avenue, north of Woodmere cemetery.

Detroit City Lodge, also Jewish, about three miles from the city hall, and north of Fort street.

Early in the modern history of Detroit a cemetery organization was effected, under Protestant auspices, and at sundry times some 78 acres of land were purchased, along the banks of the stream originally called Parent's creek; but subsequently known as Bloody Run, from the fatal battle with the Indians which occurred at its mouth, on the 31st of July, 1763. The cemetery has received the name Elmwood; and is carefully and appropriately laid out and planted; advantage having been taken of the native growths already upon the grounds, which are extensively occupied. It lies north of Croghan street and east of Elmwood avenue.

Free Sons of Israel is also a Jewish burial ground, owned by the Society of Free Sons of Israel; and located on Mount Elliott avenue.

Lutheran cemetery, owned by the Evangelical Lutheran Trinity church, is on Mount Elliott avenue, north of the Gratiot road.

Mount Elliott is a Catholic cemetery, lying immediately east of Elmwood, and on the west side of Mount Elliott avenue. It embraces about 50 acres of land.

Shaary Zedeck is still another Jewish cemetery, owned by the Society of the Synagogue and Shaary Zedeck; located on the Marsh road, near Grand Trunk junction.

Woodmere is another Protestant cemetery, located below the city, on high, rolling land, with sandy soil, and contains many fine forest trees. It is a comparatively recent enterprise and comprises about two hundred acres. It

is traversed by Baby's creek; and has five miles of walks and drives. One drive, of about three miles, is entirely through the woods upon the grounds, though not yet completed. These grounds are about four and three-fourths miles from the city hall, and a mile from Detroit river, on Fort street west.

In 1880 the corporate authorities of the village of Plymouth purchased twenty acres of land on the northeasterly side of the river Rouge, and overlooking the village, which has been tastefully laid out, planted and occupied for burial purposes. It is known as Riverside cemetery.

Rural Hill cemetery, located on the south side of the river Rouge, about three-fourths of a mile southwest of the village of Northville, comprises seventeen acres. It is the property of an association and is being very beautifully laid out and improved, for the use of that village and surrounding country.

The parks of Detroit are thirteen in number, aside from Belle Isle, the total area of which is nearly forty and one-half acres. One of these comprises about one-fourth of an acre, and another nearly three-fourths of an acre. Two others comprise about four and one-half acres each, and are laid out in walks and grass plats, and the walks shaded with maple trees. The largest of these parks embraces over forty and one-half acres. This is not yet improved or ornamented.

A boulevard, about ten miles in length and one hundred and fifty feet wide, is in process of construction, commencing in the eastern front of the city, forming a circuit around its northern portion to its western limits, and extending along its western boundary to the river.

In May, 1879, an act of the Legislature empowered the city of Detroit to purchase Belle Isle (an island lying just above the city, in Detroit river, and embracing over six hundred acres of land), for a public park, and to connect it with the city by a bridge over the American channel. In August of that year such purchase was made for the sum of \$200,000.

The improvement and ornamentation of this park are but fairly commenced. Owing to the slight elevation above the river and the existence of marshes at certain points just within the shore line, the processes of drainage and improvement are of a somewhat difficult character.

John Stirling, deceased, late secretary of the Belle Isle park commission, says: "The timbered portion of the park extends through its center and along its entire length, except a small part at the lower end. It is proposed to drain this entire section by means of a series of three canals.

"The first of these, called the outlet canal, which has just (in 1883) been completed, extends in a semi-circular form across the lower end of the park, its outlets entering respectively the American and Canadian channels of the river at each lower corner of the park. It is 3,500 feet in length, 50 feet in width at the water line, and five feet in depth at the ordinary water level, costing \$10,585.

"Entering this outlet canal near the centre it is proposed to construct two lateral canals to extend northward through the centre of the park, about 200 feet apart, and of somewhat tortuous form, to avoid formality, to a point a little beyond half way, where they will diverge, leading toward and along the edge of the woods until they enter Lake St. Clair at the upper end, about 1,500 feet apart from each other. It is hoped, after filling up several low spots in the woods, that surface drains leading into those canals will be all

that is required to carry off the superfluous water from the wooded portion of the park. Provision is made in the plan for a gate on each canal at the upper end and also one at each end of the outlet canal which, in the event of floods from long continued rains or from unusually high water in the river at any time, may be shut, and the water in the canal kept, by means of steam power, at any desired level."

Parade grounds, shooting ranges and other facilities for amusement are contemplated, and ample shelter for visitors against sun and storm are to be supplied. It is proposed to leave the wooded portion on the upper half of the park, as far as practicable, in its natural condition, carefully thinning and trimming the growths to secure the healthy and sturdy growth of the remainder, and opening the needful walks and drives.

Probably the earliest horticultural society in the State was the Detroit Horticultural Society, which completed its organization on the 16th of March, 1841, with John Winder as president, John C. Holmes and B. G. Stimson as vice-presidents, M. Howard Webster corresponding secretary, John Lumsden recording secretary, and Thomas Hall treasurer. This society made many fine displays of fruit, flowers and plants, continuing its meetings and exhibitions till the spring of 1853, when, from some unexplained cause, it became disorganized.

This locality remained without a local organization till the early part of the year 1874, when a Wayne County Horticultural Society was organized, with headquarters at Detroit, which, in July, 1875, invited a meeting of the State Horticultural Society, which was held at Young Men's Hall, in Detroit. A prominent and interesting feature of this meeting, in addition to an extensive display of flowers, plants and fruits, was a large collection of the indigenous fishes of the State, in commodious tanks, arranged in the basement of the building. This display was made by S. H. Davis & Co., of Detroit, and was in charge of Captain A. Harriman. The State Society was welcomed to Detroit by President W. T. Jupp, of the Wayne County Society, and the exercises were conducted by T. T. Lyon, president of the visiting society.

The sessions were made doubly interesting by the presence and active participation of Dr. John A. Warder, president; M. B. Bateham, secretary; G. W. Campbell, treasurer, and N. Ohmer and Leo Welz, official members of the Ohio Horticultural Society.

The Wayne County Society maintained its existence for a year or two longer, when it became dissolved.

On February 12th, 1884, a new Wayne County Horticultural Society was organized, with the aid of Secretary C. W. Garfield, of the State Horticultural Society, with the town of Plymouth as headquarters. It was constituted auxiliary to the State Horticultural Society, with A. D. Stevens as president, and D. F. Griswold, secretary. This society still maintains its organization.

The State Agricultural Society, which was organized at Lansing March 23, 1849, and incorporated by act of the Legislature, approved April 2d, 1849, held its first annual fair at Detroit on the 25th, 26th, and 27th of the following September. Those of 1851 to 1863, inclusive, were also held at Detroit. They were held at other places during the next four years, but were again held at Detroit in 1867 and 1868, after which they were held elsewhere for nine consecutive years, recurring at Detroit in 1878, 1879, and 1880, and again, after an absence of two years, in 1883, in September of which year the last exhibition was held in this county down to the present time. Since 1872

the horticultural portion of these exhibits has been made by the State Pomological (now Horticultural) Society.

At the opening of the Centennial Exhibition of 1876, at Philadelphia, in the month of May, John Waterman and P. E. White, of Northville, contributed fine specimens of apples, the growth of the previous year, under the name Steele's Red Winter, which were so like Red Canada, coming from other sections of the State, that the judges failed to detect a difference.

At the general exhibit of northern fruits, commencing September 11th, the Wayne County Horticultural Society (the one organized in 1874), contributed valuable aid. Fine exhibits of fruits were also forwarded at sundry times from J. W. Humphrey, of Plymouth, drawn from the experimental orchards planted at that place by T. T. Lyon.

The winter of 1872 and '3 was exceptionally cold throughout the northwest. As giving a slight indication of the modifying influence of adjacent water, we quote the following minimum temperature at corresponding dates :—

Northville, Dec. 24th, 1872,—27°; Jan. 29th, 1873,—29°.

Near Detroit, Dec. 24th, 1872,—25°; Jan. 29th, 1873,—34°.

Detroit river was doubtless nearly or quite free from ice at the date of the former observation, and was probably covered with ice at the latter date, while the elevated location at Northville gave it the advantage at the second period.

A little north of the village of Wayne, in the township of Nankin, occurs a natural grove of chestnut trees, many of them of large size, interspersed more or less freely among other forest trees. The fruit has proved so abundant and profitable that, in many cases, farmers have been induced to cut away all other trees, leaving these for the profit of the crop. The grove originally occupied several hundred acres, and is supposed to be the only one in southern Michigan, except a similar one a few miles from the city of Monroe.

The census of 1884 gave to Wayne county of apple orchards 8,817 acres, 284,267 bearing trees, yielding in 1883, 85,933 bushels of fruit.

Peach orchards, 78 acres, 3,734 bearing trees, yielding in 1883, 738 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$52,186.00.

Vineyards, 94 acres: grapes sold in 1883, 41,939 pounds.

wine made in 1883, 420 gallons.

Nurseries, 47 acres; products sold in 1883, \$17,866.00.

Market garden products sold in 1883, \$117,729 00.

WASHTENAW COUNTY.

This county was set off by Governor Cass, by proclamation, issued on the 10th of September, 1822, including what are now the south half of Livingston county, the southeast four townships of Ingham, and two tiers of townships of what is now Jackson county. It was temporarily attached to Wayne county.

It was organized, with the limits already prescribed, by act of the Legislative Council, taking effect on the 31st of December, 1826.

Subsequently, by an act of the Legislative Council, approved October 29th,

1829, two tiers of townships were cut off, or omitted from the west side of the county as originally set off.

The name, Washtenaw, comes from Wash-ten-ong,—the Indian name of Grand river, and means at, or on, the river.

Ann Arbor is the county seat. The name comes from the Christian names of two pioneer lady settlers, both being Ann, who pitched their tents between what are now Huron and Washington streets, upon a beautiful burr-oak plain, by a spring. Their name, Ann, with the addition of the word Arbor, became that of the incipient town.

The earliest permanent settlement in the county was by Benjamin J. Woodruff, at Ypsilanti, then known as Woodruff's Grove, on June 5th, 1823. He was, the next year, followed by others, at Ann Arbor. In 1826 there was but one house at Dexter, and no wagon had been beyond that place.

An orchard was planted, in 1824, by Oliver Whitman, in Ann Arbor township, which was rapidly followed by other similar plantations, as settlements occurred.

A small apple tree nursery was planted in 1825, by Deacon Israel Branch, on the ground now occupied by the Buchoz block. In 1827 Ezra and Horace Carpenter (father and son) planted half an acre with apple seeds, and two years thereafter commenced to sell trees therefrom.

Deacon Mills raised a few locusts from the seed, and from them, in 1828, planted six trees on the block now occupied by Mr. Keck. Trees, mostly locusts, were also planted on Court-house square, which were committed to the care of the "boys."

A general nursery, with greenhouse attached, was started in 1833, near Ypsilanti, by E. D. & Z. K. Lay, which at one time covered fourteen acres. It was continued till about 1855, when it was discontinued by the remaining brother as a relief from excessive care.

The first apple seeds were planted in southern Washtenaw in 1831, by Royal Watkins. These were selected seeds, from a favorite apple tree in Keene, New Hampshire, known by the family as "Old Juicy." The hope to succeed in reproducing the quality of the original tree, however, was not realized. The seedlings had been browsed by deer so severely that, when planted in orchard, two years later, they were started anew from the ground. They were never grafted, and, at present, but one remains, which is kept as a landmark. It now measures nine feet and seven inches in circumference at one foot above the ground. The branches have a spread of forty-five feet. It has borne ten barrels of apples in a single year.

In 1835 a nursery was commenced in Manchester by James Nowlin, and one in Freedom, in 1838, by James Winton. From these were supplied the trees for nearly all the orchards of this region.

In 1850 S. B. Noble (for some time horticultural editor of the Michigan Farmer) commenced a small nursery of fruit trees at Ann Arbor, which was discontinued after a few years, upon the death of the proprietor.

In 1828 a number of old fruit trees were standing at Ypsilanti, which were said to have been planted by the early French traders. These have now mostly disappeared. Most of the earlier apple trees, planted over fifty years since, are now dead or nearly so. Of grafted varieties, Rhode Island Greening has proved the longest lived.

"There is on the premises of C. H. Worden, of this city (Ann Arbor) a famous apple tree, of great age, which is yet vigorous. There were more than

eight barrels of apples taken from it last year (1880). The fruit is of excellent quality, always taking the premium at our county fairs, whenever the committee can agree as to its name. The tree is known to be more than fifty years old, but how much older cannot be ascertained."

Much taste is manifested at both Ypsilanti and Ann Arbor in the planting of shade and ornamental trees and shrubbery in streets as well as in public and private grounds. In the latter city, indeed, it may be fairly charged that the close planting, with the subsequent growth, if it has not already unfavorably affected the cheerfulness as well as healthfulness of residences, must surely soon do so in many cases unless prevented by a resort to thinning.

The growths about the University buildings were planted at an early day; not, however, with much apparent regard for modern landscaping ideas, which, however, may perhaps properly have been deemed not applicable in the case. No particulars are at hand or readily accessible respecting the grounds connected with the State Normal School at Ypsilanti which are understood to be carefully laid out, planted and kept.

Fairview Park constitutes part of the ornamental grounds attached to the residence of Mr. L. D. Watkins, of Manchester, upon his farm of over eleven hundred acres of excellent land situated on both sides of the line between Washtenaw and Jackson counties. It was laid out and planted by the present proprietor and covers about twenty-five acres. The location of this, as well as of the grounds more immediately about the residence, is naturally admirably adapted to the purpose, and these advantages, together with the original timber growths, have been carefully utilized for the purpose of securing early and satisfactory results. Among these native trees are nine white oaks, ranging from twelve to eighteen feet in circumference. The plan involves the idea of a densely shaded centre with outlying groups and single trees, somewhat after the manner of the approach to a forest from an open prairie.

In the additional planting mostly native trees have been employed. Of these fifty-nine varieties occur; and of introduced varieties, twenty-three. The shade of the central portion is already so dense that little surface or undergrowth occurs, since the latter has been carefully removed and the growth of grass encouraged as far as possible, to the better adapt it to purposes of pleasure or amusement, for which it is understood to be freely opened to the public. Many of the trees are fully fifty feet in height, and all seem healthy and vigorous.

Rock work is introduced to some extent as a means of protecting tender trees, evergreens, etc.

In 1867 the premium of the Agricultural Society for the best orchard was awarded to that of John Starkweather, of Ypsilanti. The orchard includes three acres—soil sandy loam—contains one hundred and twenty trees, planted in the spring of 1846. He prunes "by the eye," with reference to the natural habit of the tree; and when a tree dies he removes it at once, applies a compost of muck and barnyard scrapings to the soil, and plants a good-sized tree in its place.

The County Agricultural Society reports the apple crop for 1868 (a year of general failure) as about one-fourth of an average, and peaches very few.

The extensive apple and peach orchards of S. W. Dorr, which were visited and commended by the orchard committee of the State Pomological Society

in 1877, have apparently been injured by recent severe winters, or other causes, to such an extent that very many trees have been cut down; and, owing perhaps to the failing health of the proprietor, the remainder are being neglected.

Mr. George D. Kies has an extensive young fruit plantation near Manchester, including more or less small fruits, together with forty acres of pears, mostly Angonleme, a late autumn variety. Near this village are several other plantations of apples; pears, peaches and other fruits, for commercial purposes, to which the soils and the rolling surface and thorough drainage of this region seem to be well adapted.

Recently the elevated, rolling lands along the Huron, in the vicinity of Ann Arbor, have been discovered to be well adapted to the growth of fruits; and they are being extensively devoted to this use for commercial purposes.

A building especially intended for the purpose of retarding the ripening of fruits has recently been constructed by J. D. Baldwin, of Ann Arbor, in which, without the use of ice, he is enabled to keep even the most perishable fruits, during the warmest weather, at so low and equable a temperature that, when the state of the market renders it desirable, their over maturity may be prevented for several days, while long keepers can be kept at so low a temperature that the process of maturing is mainly suspended during winter and spring, enabling the owner to place them upon the market after others have disappeared, thus commanding highly satisfactory prices.

In 1875 Jacob Ganzhorn, speaking of fruits in Washtenaw county, remarked: "There are a few orchards here which bore large crops in 1874. These have gone through the cold winter of 1874-5 without injury to the trees, are finely filled with blossom buds this spring, and seem every way thrifty and healthy."

Of apples he said: "Farmers say that, acre for acre, they realize more from their apples than from their wheat fields."

Of the pear he stated that Prof. Baur had planted one thousand trees within the past two years, and had been remarkably successful with them.

He also remarked that the grape had gained a substantial foothold here, that a neighbor would plant one hundred plum trees the following spring, that small quince plantations were springing up here and there, and that plats of small fruits were being largely planted.

Mr. S. W. Dorr in 1879 stated that there were about two hundred and fifty acres of peach orchards in the immediate vicinity of Ann Arbor, that his own place is high, so high that his well is one hundred and four feet in depth to the water, and that he gets peaches six years out of seven. His place is in southwestern Washtenaw.

In the spring of 1870, Charles H. Woodruff, of Ann Arbor, planted seeds of Concord grape. From these sprang the grape known as White Ann Arbor, which first fruited in 1873. At the Washtenaw county fair of that year it was awarded a special premium. It is, however, alleged to have defects that stand in the way of its general popularity.

Woodruff Red is another seedling of the Concord by the same person, originated in 1874, and first fruited in 1877. The fruit was shown at the meeting of the American Pomological Society, at Boston, in 1881, and was offered to the public in 1885. Its alleged hardiness and productiveness, together with the clear, bright color of the fruit, and the large size of both berry and bunch, combine to render it attractive as a grape for general cultivation.

The cemetery at Ann Arbor is the work of a private association. It embraces a beautiful tract of land southeasterly from the city, upon the bluff overlooking the valley of the Huron, sufficiently but not objectionably diversified in surface. The natural growth, mostly of young oaks, had not been removed, and has been so utilized as to require comparatively little artificial planting.

In laying out, advantage has been so far taken of the natural inequalities of the surface that comparatively little grading has been found needful, while a few evergreens, planted mainly along the drives, suffice to impart variety to the whole.

From its inception the enterprise has been under the management of J. Ausin Scott, of this city, who has, without stint, given his time and energies to the work of bringing the enterprise up to its present very satisfactory condition.

In the year 1839 a State Agricultural Society, with Hon. John Biddle, then of Detroit, as president, gave public notice that a State fair would be held at Ann Arbor, on October first of that year. No officers of the society appeared upon the occasion, and the only exhibitors were Henry Raymond, of Detroit, and John Tibbitts, of Plymouth. No subsequent doings of this society are known to have occurred. (See Michigan Pioneer Collections, vol. 3, pages 245 and 246.)

The present State Agricultural Society held its second annual fair at Ann Arbor; Epaphroditus Ransom, of Kalamazoo, being president, and J. C. Holmes, of Detroit, secretary. The fair was held on Wednesday, Thursday and Friday, September 25th, 26th and 27th, 1850, with a list of premiums amounting to \$2,500.

On July 7th, 1849, a county organization was effected, taking the title "Washtenaw County Agricultural and Horticultural Society."

The Washtenaw County Pomological Society was organized in 1878, largely through the efforts of J. Austin Scott, for many years one of the leading horticulturists of Ohio, but more recently of Ann Arbor. The society became auxiliary to the State Horticultural Society, which, upon invitation, held a very interesting and profitable meeting here on December 6th, 7th and 8th, 1880, the same being its annual meeting for that year.

Upon a similar invitation the annual meeting of the State Society for the year 1884, was also held here on December 1st, 2d and 3d. As at the previous meeting the circuit court room was opened for the purpose as were several adjoining rooms, in which to accommodate the accompanying exhibits. This meeting proved no less interesting and profitable than the previous one had done.

The auxiliary has submitted annual reports to the parent society since its organization. It receives valuable sympathy and encouragement from the officials of the University, and is believed to be exerting an elevating and refining influence upon the horticulture of the city and country.

According to the census of 1884 Washtenaw county has, of

Apple orchards, 11,861 acres, 380,635 bearing trees; yielding, in 1883, 185,110 bushels of fruit.

Peach orchards, 827 acres, 92,180 bearing trees; yielding, in 1883, 323 bushels of fruit.

The value of orchard products of all kinds, sold or consumed, in 1883, was \$80,488.00.

Vineyards, 62 acres: grapes sold in 1883, 65,195 pounds.
wine made in 1883. 567 gallons.
Nurseries, 3 acres ; products sold in 1883, \$608.00.
Market garden products sold in 1883, \$19,084.00.

JACKSON COUNTY.

This county was set off by an act of the Territorial Legislature, approved October 29th, 1829, and the county seat was located on March 31st, 1830, near the point where the territorial road crosses Grand river, by a commission whose report was made to Governor Cass.

The organization of the county was perfected in pursuance of a subsequent act of the territorial legislature, which took effect August 1st, 1832.

The name comes from General Andrew Jackson, president of the United States at the time.

The entire county was organized into a township under the name of Jacksonopolis by an act of the Legislative Council, approved July 30th, 1830, which name was changed to Jacksonburg by an act approved February 18th, 1831. The village was granted a city charter by act of the State Legislature, approved February 14th, 1857, taking the county name, Jackson.

In the second volume of "Pioneer Collections," on page 274, Michael Shoemaker says: "The first settlement on the site of what is now the city of Jackson, by white people, was made in 1829. A portion of the ground had been occupied and cultivated by the Indians long anterior to the appearance of the white man. The site of Jackson was a favorite camping ground for the Indians and a central point for their trails, leading to all parts of the Indian territory, prophetic, as it were, of the future in store for it in becoming one of the principal railroad centres of the State."

On July 3d, 1829, Horace Blackman made the first location of land in the county, on which now stands a portion of the city of Jackson. During the fall he built a log cabin thereon, which was the first house built in the county by a white man. In this building he settled with his family in May, 1830. Prior to his return and final settlement, however, several other immigrants had effected settlements in the immediate vicinity.

The village of Jacksonburgh was platted in 1830, and from twenty to thirty buildings were erected during the summer and autumn of that year.

The first orchard in the county was planted in 1830, by A. W. Daniels, upon his farm, adjoining the present city of Jackson.

A settlement was effected in 1831, in the town of Leoni, by Joseph N. Otis, who, the following year, planted a seedling orchard, which, in 1835, was grafted with improved varieties by Z. M. Barber. About one-third of these trees are now dead. The remaining two-thirds are yet in good condition.

In 1834 Timothy W. Dunham emigrated from Orleans county, New York, bringing with him a quantity of apple root-grafts, which he planted at Sandstone. In autumn of that year he revisited his former home, returning with more grafts, cions, and a quantity of apple seeds, which he subsequently sold, together with his previous importation, to Townshend E. Gidley, long a prominent nurseryman and orchardist of this county, but, more recently, of Grand Haven, Ottawa county.

Samuel O. Knapp, a native of Royalton, Vermont, settled in Jackson in 1844, where he resided until his decease, in January, 1883, with the exception of about four years (from 1847 to 1851) which he spent in the upper peninsula mining region, during which time he discovered and opened the celebrated Minnesota copper mine. He early manifested a fondness for fruit culture, as well as for horticulture generally, and indulged somewhat extensively, as an amateur, in the planting and testing of varieties, both of fruits and ornamental plants. He, at the same time, expended means freely and judiciously in the arranging, planting, and ornamenting of the ample grounds attached to his residence at Jackson. These grounds were highly commended by the committee of the State Horticultural Society, who visited and examined them in September, 1883. His example has been highly influential in developing the horticultural taste of the city of Jackson and its vicinity.

Mr. Knapp was a life member of the State Horticultural Society, and was elected its president at its annual meeting in December, 1874, which position he, however, declined.

Numerous small nurseries were established very soon after the settlement of the county, which supplied trees for many if not most of the earlier orchards, but they seem to have been intended to subserve a temporary purpose, and to have disappeared soon after the early wants had been supplied.

The early settlers usually planted orchards as soon as suitable ground could be prepared, but very few seem to have embarked in the business solely for commercial purposes. Among such, however, Townshend E. Gidley and Daniel Cook are noteworthy cases, as was that of Harwood & Dunning who planted a large orchard in 1855 and 1856, upon the lands of M. Shoemaker, which produced well for a time, but which no longer exists.

Peaches were successful here prior to the winter of 1854 and '55, when the trees were either killed or seriously injured by severe cold, since which the crop of this fruit has proved uncertain, although orchards of greater or less extent still exist, and when on rolling and elevated lands are in some cases fairly successful.

A County Agricultural Society was organized in 1852. A local agricultural Society was also organized at Springport in 1873. These societies devote more or less attention to horticulture, and especially to the culture of fruits.

On April 3d, 1880, the Jackson County Horticultural Society was organized as auxiliary to the Michigan State Horticultural Society, with W. K. Gibson as president, and R. T. McNaughton as secretary.

The State Agricultural Society held its annual fairs on the grounds of the County Agricultural Society at Jackson, in 1869 and 1870, and the Union fair of that and the State Horticultural Society also occurred here in 1876 and 1877, and again in 1881 and 1882, returning here after a three years' absence, in 1886.

With the growth of the city of Jackson and the development of the adjacent country, several extensive greenhouses, with other kindred establishments have sprung into existence to supply the increased demand for plants and flowers for decorative and other purposes.

Excellent taste and judgment is also said to have been displayed in the laying out of the city cemetery, although the lack of data precludes more than a bare mention of it.

In 1876 the display of fruits, the growth of the previous year, which proved so highly creditable to the State, was contributed to from this county by R. S. Fassett and C. Harrington, of Sandstone; George Gavoit, Spring Arbor, and H. W. Doney, Jackson.

To these must be added A. A. Bliss and C. B. Kress, Jackson; J. N. Peck, Henrietta; Elijah Bemis and Robert Bradford, Sandstone; H. H. Daniels, Blackman, and H. J. Crego, Liberty, who contributed to the grand final display of fruits in September and October.

In 1874 the orchard committee of the State Pomological Society awarded three first premiums to S. O. Knapp, Jackson, for suburban ornamental grounds, for collection of hardy flowering plants, and for a private plant house.

Jackson county, according to the census of 1884, has of apple orchards 9,417 acres, 296,394 bearing trees, yielding in 1883 148,870 bushels of fruit.

Peach orchards, 195 acres, 19,636 bearing trees, yielding in 1883 106 bushels of fruit.

The value of orchard products of all kinds, sold or consumed, in 1883 was \$71,250.

Vineyards, 17 acres: grapes sold in 1883, 10,665 pounds.

wine made in 1883, 21 gallons.

Nurseries, 32 acres; products sold in 1883, \$1,728.

Market garden products sold in 1883, \$22,360.

CALHOUN COUNTY.

This county was set off by an act of the Territorial Legislature, approved October 29th, 1829.

The lands of the county were not offered for sale till October 30th, 1830. There was much competition for the location of the land at Marshall, which included the water privilege on Kalamazoo river at that place. This was finally secured by Sidney Ketchum, who is recognized as the pioneer settler of the county.

The county was organized in pursuance of the Legislative Council of the territory, which was given effect from and after April 1st, 1833.

It was named Calhoun, from John C. Calhoun, of South Carolina, at that time vice-president of the United States.

The county seat was located at Marshall, by commissioners appointed by Acting Governor Mason, who confined their action to proclamation, October 7th, 1831.

There was much activity in the selection and purchase of lands at and after the date of placing them in the market, and it seems quite certain that, in very many cases, actual settlements were effected very soon thereafter, although such fact remains in uncertainty, and the same is true of the making of farm improvements, and especially of those of a horticultural character. Although there is abundant occasion to suppose that the planting of orchards, here as in other settlements, followed closely and generally upon the opening of farms, the earliest orchard of which we have a definite account is that of Robert Church, of Marengo, who settled in that town

October 24th, 1836, and, a few days later, visited Ypsilanti, purchased two hundred apple and one pear tree, fifty of which, together with the pear tree he planted, at once on the new farm, among logs and brush, while the remainder were distributed to others in the vicinity.

Mr. Church also, at this time, established a nursery, from which many orchards were planted, both in this and in adjoining counties.

A County Agricultural Society was organized in 1848, which has been maintained down to the present time.

A first premium was awarded, in 1850, to the farm of S. G. Patterson, of Marengo, which reported, among the products of that year, five bushels of Isabella grapes, three hundred bushels of peaches and forty bushels of plums.

The report of the County Agricultural Society for 1868 states that apples yield but one-fourth of an average, while peaches had been mostly winter-killed.

At the county fair for 1869 there were thirty exhibitors of fruits. The display of apples and pears was unsurpassed. There were a few fine peaches, but it was too late for most varieties of this fruit. The show of grapes was deficient, owing to wet weather.

At the fair of 1870 the display of vegetables and fruits was reported to be very large and excellent.

At the opening of the Centennial Exposition at Philadelphia, on May 1st, 1876, N. Helling & Brother, the proprietors of a retarding house at Battle Creek, were present, with a fine collection of apples, the growth of 1875, in excellent condition, among which were Escopus Spitzenburgh, Yellow Bel-flower, Westfield Seek-no-further, Red Canada, Ben Davis, Baldwin, Rox-bury Russet, Vandevere, Jonathan and Northern Spy. This beautiful exhibit, so late in the season, attracted a crowd of admirers.

On December 2d, 1873, the State Pomological Society held its annual meeting at Battle Creek, with a large attendance and a fine display of fruit. The very gratifying success of the meeting was thought to be largely due to the efficient efforts of Chilson Brothers, of that city.

The orchard committee of the State Pomological Society for the year 1874 awarded premiums to citizens of Calhoun county as follows:—

To N. & C. Chilson, Battle Creek, first premium for vineyard for profit.

On June 16th, 1880, the summer meeting of the State Pomological Society was also held at Battle Creek, with the active and efficient coöperation of Mr. N. Chilson, who was at that time a member of the executive board of the society.

During this meeting the society, by vote of its membership, changed its title to that of Michigan State Horticultural Society.

The State Horticultural Society held its winter meeting for the year 1883 at Marshall, on the 8th of March, in conjunction with an institute of the County Agricultural Society. The meeting was an enjoyable and profitable one, including several papers, with subsequent discussions of an agricultural character.

Chilson Brothers for a series of years conducted a vineyard, nursery and greenhouse at Battle Creek, with the addition during a portion of the time of vegetable or market gardening. More recently the enterprise has suffered severely from the winter-killing of nursery stock, and has been discontinued.

A peach orchard at or near Battle Creek, planted prior to 1873, by Mr.

Merritt, was examined during that year by the orchard committee of the State Pomological Society, who found it in an unhealthy condition, apparently from the effect of extreme cold, in an unfavorable locality.

A nursery was established at Battle Creek by Mr. Willis about the year 1840; also one at the same place by Mr. Penniman about 1847; both of which have long since been discontinued.

Calhoun county, according to the census of 1884, had of apple orchards, 9,759 acres, 288,148 bearing trees, yielding in 1883, 167,711 bushels of fruit.

Peach orchards, 255 acres, 13,734 bearing trees, yielding in 1883, 527 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$71,804.

Vineyards, 25 acres: grapes sold in 1883, 14,407 pounds.
wine made in 1883, 31 gallons.

Nurseries, 4 acres; products sold in 1883, \$915.

Market garden products sold in 1883, \$14,012.

KALAMAZOO COUNTY.

This county was set off and named by act of the Legislative Council of the Territory, approved October 29th, 1829. It was organized in pursuance of an enactment of that body which was given effect from and after October 1st, 1830. Its name is derived from the Indian name of the river—Ke Kenamazoo—meaning the boiling pot.

The county seat was located at Bronson, in January, 1831, by commissioners appointed by Governor Lewis Cass; and such location was confirmed by proclamation of Secretary and Acting Governor Stevens T. Mason on May 12th, 1831. The name—Bronson—was subsequently changed to Kalamazoo.

George Torrey, at page 207 of the first volume of Michigan Pioneer Collections, says: "The first settlement of Kalamazoo county dates back to 1828. In the fall of that year Basil Harrison, with his family of sons and daughters, with a desirable collection of household goods, arrived on Prairie Ronde and settled on the timbered marge, by the side of a little lake which he called after his name. Harrison was born in Maryland; went, when young, to Virginia, then to Pennsylvania, then to Clark county, Ohio; and, in his fifty-eighth year, came to Michigan, where he lived till August 30th, 1874, dying at the great age of one hundred and three years. He was a nephew of Benjamin Harrison, one of the signers of the Declaration of Independence, and cousin of President Harrison."

A portion of the land occupied by the present city of Kalamazoo was pre-empted by Titus Bronson, known at the time as "Potato" Bronson, he having imported and widely disseminated the Neshannock (Mercer) potato. Such pre-emption occurred in 1829, the lands not being yet in market. In 1831 he platted and recorded this land under the name Bronson, subsequently changed to Kalamazoo.

A County Agricultural Society was organized as early as 1845, which has maintained its existence till the present time.

A few bearing apple trees were found by the first settlers on Grand Prairie, on the farm originally purchased by Seth Taft, supposed to have sprung from seeds accidentally dropped by French traders on the deserted site of an Indian village.

One of the earliest attempts at fruit growing in the county is believed to be that of Enoch Harris, the first settler on Genesee Prairie, in 1829 or 1830, who brought apple seeds with him and grew and planted the seedling trees in orchard. The original seedling orchard was, in 1873, still thrifty and productive.

For many years the plum and the peach were abundantly successful, but the advent of the curculio and the rot, together with a succession of excessively severe winters, have since sadly interfered with their success; still the persistent use of remedies, with thorough cultivation and enrichment of the soil, and the selecting of suitable locations for planting will, even yet, generally insure success.

While the pear, the cherry, the grape, and the small fruits are more or less generally and profitably grown, the apple here, as elsewhere in this State, is the staple fruit. Orchards covering from ten to forty acres may occasionally be found.

In a single case, that of Mr. Dunkly, of Kalamazoo, the growing of strawberries for market by means of irrigation has been practiced with eminent success, the effect being to largely increase the size and quantity of the fruit, and to very considerably retard its maturity, while by this means the planting of new beds in August, for the next season's fruiting, is as readily, safely, and economically done as in spring, and with as satisfactory results. Mr. Dunkly also employs irrigation, to a greater or less extent, in the growing of vegetables.

In 1850 a premium was awarded to the farm of Godfrey Knight, of Schoolcraft. The committee, in its report, speak of the orchard as follows: "He has an orchard, fenced, on the road, with good substantial pickets, containing seven acres, with about four hundred bearing apple trees and a great quantity of peaches, plums, etc., and on the inside of this orchard there is a hedge of apple, thorn and English gooseberry, which is already nearly sufficient to constitute a full and safe fence. Mr. Knight estimates the fruit of his orchard this year at over five hundred bushels of apples, besides his summer fruits. This fruit is of choice kinds."

A similar award was made in 1851 to the farm of F. W. Curtonius, of Grand Prairie, who reports, respecting his orchards, as follows: "I have about seventy apple trees, all grafted fruit. I have also Seckel and other pears; Washington and Golden Drop plums, and others. Of cherries, black and white Tartarian and Ox Heart; of peaches, some seventy or eighty trees, of good, bad and indifferent kinds."

In 1869 orchard entries from the county were made by Erasmus Davis, four and one-third acres of peach and pear orchard and vineyard; and by P. C. Davis, one acre and fifty-six rods of pear orchard. In these cases the committee fully conceded the excellency of the plantations, but withheld the awards for lack of adequate statements of the systems of management.

The display of fruits, especially apples, at the county fair of 1869 is said to have rarely been equalled.

In 1871 the county produced forty thousand barrels of apples, which sold for an average of two dollars per barrel; also one thousand bushels of

peaches, ranging in price from seventy-five cents to two dollars per bushel.

In 1880 the County Agricultural Society reports: "Fruit and vegetable hall was filled to overflowing, and in all of its appointments elicited universal commendation. Floral and art hall was reasonably well filled. It is to be remembered that this is a large building, erected for the use of the State fair, and there has usually been more or less empty space. At the last fair there was an unusually fine display of garden and greenhouse plants and flowers, and our gardeners and florists are well deserving the thanks of the society for what they have done to fill up this department of the fair. It is undeniable that the floral display is an exceedingly attractive feature of this hall, and it cannot be dispensed with without serious harm."

Hill's Chili peach proves to be identical with the Cass peach, which was planted on Genesee prairie, near Kalamazoo, in 1831, and was reputed to have been brought by General Lewis Cass, from Normandy; although of the truth of this there are reasons for grave doubt. This peach is reproduced from seed, with little or no variation, and was so propagated for a considerable period by a Mr. Hill, of the town of Chili, in western New York; hence its name. It had been brought there, in the seed, from the State of Connecticut, and for that reason was for a time known there as the Connecticut peach. Stanley's Late, Sugar, Jenny Lind, Leopard, Queen of Sheba, and Seagrove's Smock are identical, and are probably reproductions of this variety.

The Primate apple was first brought to this State and grafted into orchards in Galesburg, in this county, prior to January, 1852, by Lyman Tubbs, formerly of Benton Centre, New York. Mr. Tubbs originally obtained the variety from New Jersey, where, however, it seems to have been very little known, and the time, place, and manner of its origin are yet undetermined. In this State it has long since come to be recognized as one of our most desirable summer apples.

In the autumn of 1834, or the spring following, Timothy W. Dunham removed from Jackson county to Kalamazoo and purchased forty acres of land at what is known as Indian Fields, four miles south of the then incipient village of Kalamazoo, where he planted a quantity of apple seeds as the commencement of a nursery. On a subsequent journey to western New York he added a few peach trees to his collection, together with a quantity of cions and roots, obtained in part from Rochester, New York, and in part from E. D. and Z. K. Lay, who had already established a nursery at Ypsilanti, Michigan. The Dunham enterprise was rapidly expanded, till it comprised twelve acres of nursery and eighteen acres of orcharding. It is said to have supplied a large proportion of the original orchards about Kalamazoo. The establishment was sold and discontinued soon after 1854, at which time Mr. Dunham removed to St. Joseph, to reëngage in orcharding there.

Prior to 1854 L. G. Bragg & Co. had commenced the nursery business in the vicinity of Kalamazoo, which has been maintained down to the present time, although for the last few years J. N. Stearns, who for a considerable period had been one of the partners, has ceased to be such, and has been engaged in the same business individually.

Other enterprises of the same character were also undertaken by Mr. Tomlinson, Mr. Johnson, Mr. Prouty and H. Dale Adams, but all these are understood to be already discontinued, although at least one of them, Mr. Adams, still maintains extensive orchards and vineyards, and devotes much attention,

largely in an amateur way, to the care and management of plants and flowers in garden and greenhouse. A nursery owned and conducted by E. M. Potter, of Kalamazoo, has been in operation for many years.

As early as October, 1855, Geo. Taylor immigrated to Kalamazoo from Scotland, where he had had much experience in the propagation of trees and plants. In the spring of 1856 he commenced a nursery, making a specialty of evergreens and ornamental plants, which business he and his son have maintained, a portion of the time in connection with market gardening, down to the present time.

During the summer of 1856 Mr. Taylor planted about three hundred celery plants, which he was barely able to dispose of during the ensuing autumn and winter, by the aid of one of the village dealers, who consented to urge a trial among his customers of this, to them, new and almost unknown vegetable. Mr. Taylor, however, manifested genuine Scotch pertinacity as well as his confidence in the possibility of "educating the market," by planting and ultimately disposing of still more celery during the next season. This was followed up from year to year, thus apparently entitling him fairly to the credit of being the introducer or originator of a business which has ultimately added largely to the income as well as to the horticultural reputation of the city. Mr. Taylor's celery was grown wholly upon ordinary upland, the adaptability of the rich marsh and bottom lands to this purpose being at that time unthought of.

Although it is pretty well understood that the strong growth and bountiful yield of this vegetable upon the rich, moist, and heretofore almost waste marsh lands of Kalamazoo is secured somewhat at the expense of quality, the discovery of their adaptability to such purpose has apparently supplied the occasion for a most surprising development of a new industry, of which the early experiment of Mr. Taylor seems to have been the initiatory step. From the planting of a few rods of land for the supply of the local market, the business has, within a comparatively few years, expanded to the occupancy of nearly or quite fifteen hundred acres, and to the supplying of the markets of almost the entire country.

The plants for the earliest crop are started in hotbeds. Growers begin to plant as early as possible, using large quantities of manure. The harvesting of the early crop begins early in August. For shipment the celery is packed in boxes, each box holding a dozen bunches of a dozen heads each. For storing in winter the plants are set upright, closely packed, in a nearly frost proof building, partially below the surface of the ground, preferably upon dry upland. They are put in unblanched, the blanching being perfected, within a few weeks, when closely packed. Boards are put in every few feet, when being housed, to prevent heating and rotting. The main crop is usually planted out late in July, and only required to be harvested in time to escape freezing.

In June, 1873, the State Pomological Society held a very successful meeting at Kalamazoo, at which time a fine display of summer fruits was made.

The State Agricultural Society held its annual fairs at Kalamazoo in 1863 and 1864, also in 1871 and 1872. At these fairs very large and fine exhibits of the pomological and horticultural products of the State were made which were wholly under the supervision of the officers of the agricultural society. In 1884 and 1885 the annual State fairs again occurred at Kalamazoo, at which time the plant, flower and fruit exhibits and the control of horticultural

hall were in the hands of the State Horticultural Society, by whom the awards were made and the payments ordered to be made.

At the opening display at the Centennial Exposition at Philadelphia, on May 1st, 1876, the only contributor of fruits, the growth of 1875, from Kalamazoo county, was P. C. Davis, of Kalamazoo, who had also been a commissioner, as well as a considerable contributor to the exhibit of the previous September, at the meeting of the American Pomological Society at Chicago.

At the September and October displays of fruits at Philadelphia, the contributors from this county were H. Dale Adams, of Galesburgh, who was in charge of the State Pomological Society's collection of apples, the growth of 1876. Exhibits from this county were also made by William Bair and W. Judson, of Schoolcraft; E. Buell, J. Den Bleyker, E. H. Wheeler, P. C. Davis, N. J. Strong, Dr. Southard, Bragg & Stearns and J. S. M. Grundy, of Kalamazoo; E. P. Flanders, J. C. Blake and J. P. McNaughton, of Galesburgh.

In September, 1877, the orchard committee of the State Pomological Society awarded its diploma to the ornamental grounds of Mrs. Fred. Bush, of Kalamazoo, which the committee compliment, especially the fine lawn and the judicious and tasteful selection and arrangement of trees, shrubbery, plants and flowers. Such award may be regarded as all the more creditable on account of the generally high reputation of the village for the good taste and thorough practice in such matters of its citizens generally.

At an early date an extensive cemetery had been secured upon the bluff west of the city, which, as early as 1860, had been nicely laid out and improved, but of its more recent condition and management no information is at hand.

On April 4th, 1885, this county, as well as the State at large, suffered a serious loss in the death of Hezekiah G. Wells of the city of Kalamazoo, at the age of seventy-three years. Born at Steubenville, Ohio, June 16th, 1812, he came to Michigan in 1833, and settled at Kalamazoo in 1836. Although by profession a lawyer, he was ever an intelligent and progressive horticulturist. Appointed a member of the State Board of Agriculture at its organization, he became its presiding officer, which position he held until his final resignation from the board but a few months prior to his death. In September, 1857, Judge Wells was elected president of the first Michigan State Horticultural Society at its organization at Jackson, which position he held till it became disorganized, which occurred at the close of its second year. He was, at the time of his death, a life member of the present State Horticultural Society.

During the year 1873 the orchard committee of the State Pomological Society awarded to W. J. Wheadon, Kalamazoo, a third premium for a vineyard; to L. G. Bragg & Co., a second premium for a plat of strawberries, also a second premium for a plat of blackcap raspberries, and an honorable mention for a general nursery.

In 1877 this committee awarded to Mrs. Fred Bush, of Kalamazoo, a first premium for ornamental grounds, as heretofore stated.

According to the census of 1884 Kalamazoo county had of apple orchards 7,152 acres, 254,960 bearing trees, yielding in 1883, 102,321 bushels of fruit. Peach orchards, 283 acres, 21,883 bearing trees, yielding in 1883, 1,738 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$50,492.00.

Vineyards, 20 acres: grapes sold in 1883, 26,894 pounds.
wine made in 1883, 286 gallons.

Nurseries, 91 acres; products sold in 1883, \$17,050.00.

Market garden products sold in 1883, \$27,601.00.

VAN BUREN COUNTY.

This county was set off and named by an act of the Legislative Council of the territory, approved October 29th, 1829, and was organized in pursuance of an act of the State Legislature, which, by its terms, took effect on the first Monday in April, 1837. It was named in honor of Martin Van Buren, an official of Andrew Jackson's administration, and subsequently president of the United States.

The county seat was first located at Lawrence, but subsequently re-located at Paw Paw, which received the Indian name of an indigenous wild fruit found growing in abundance along the adjacent stream.

It is surmised by some imaginative persons that when Pere Marquette, in 1819, left the mouth of the St. Joseph on his last journey northward, he landed and perchance spent the first night of the voyage at the harbor of South Haven, and that he thus came to be the first white man to tread the soil of Van Buren county.

Be that as it may, there seems to have been no actual settlers within the county prior to the arrival of Dolphin Morris, in March, 1829, who settled and built his house just within the county, on section thirty-five of the town of Decatur. He was accompanied by H. D. Swift and his assistant. He also brought with him and planted an orchard of fifteen apple trees. In 1830 he planted peach and cherry pits, from which sprang trees, some of which are yet living.

For nearly two years Mr. Morris was the only settler within the limits of Van Buren county. His house not only sheltered the first family in the county, but it was also the first hotel, church, and school-house. In it occurred the first birth, the first wedding, and the first death, and in it was also erected the first domestic altar.

Doubtless the occurrence of the Black Hawk war at this junction, and soon after of the border or Toledo contest, acted as serious checks upon immigration. It is certain that in this, as in other portions of the State, only here and there an adventurous pioneer located lands prior to the great tidal wave of immigration which, with premonitory couriers in 1834 and 1835, swept over the southern part of the State in 1836 and 1837.

The lands included within the present village of Paw Paw were located and settled upon during the year 1832, and the mill privilege upon the stream at that place was purchased and the construction of a mill commenced during the same year.

In 1833 the first house within the limits of the present village of South Haven was built by J. R. Monroe, upon lands purchased by him from the government during that year. This, so far as is known, was the second building within the county, save possibly one or two at the present village of Paw Paw, or the temporary structures of Indian traders. Prior to the

close of the year 1837, however, settlements had been effected in nearly or quite every township in the county.

In a contribution to a "History of Michigan Horticulture," in 1880, A. C. Glidden says: "The first apple seeds planted near Paw Paw were planted by Joseph Lyle, senior. A pint of seed was brought by him in 1835, and half were planted the following spring and the remainder in the spring of 1837. James Lee came in the spring of 1838, from Ogden, Monroe county, N. Y., bringing with him cions of Rhode Island Greening, Seeknothfarther, Spitzenburg, Spice Sweet, Roxbury Russet, Big Stem Harvest, Fall Pippin, Early Harvest, Swaar, Twenty Ounce, Sweet Bough, Cheesbro Russet, Harvest Redstreak and Ox Heart (cherry?). These cions were used to engraft the young trees grown from the seeds planted by Mr. Lyle.

Joshua Bangs settled in Paw Paw in 1836. He sent back to Monroe county, N. Y., for apple seeds, which he planted in the spring of 1837. He had learned to bud and graft, and was the first to bud seedlings in the county. In 1840 he planted an orchard from these, and most of the old orchards in the vicinity of Paw Paw are from this stock.

After exhausting the Bangs stock, the Dunham nursery, near Kalamazoo, supplied most of the trees planted in this vicinity, although some came from Plymouth, Wayne county, and a few from Cooper and Schoolcraft, Kalamazoo county, between 1840 and 1844.

In 1836 Isaac Barnum brought with him from Cayuga county, N. Y., peach pits, from which sprang the first peach trees grown in the county. These were all chance seedlings, some of them of fine quality; one of them, Snow's Orange, has become a popular variety.

Mrs. Samuel Gilman came to Paw Paw with her husband in 1838, from Ogden, Monroe county, N. Y., bringing with her plum pits and other seeds, which she planted, and at that early day secured annual crops of excellent plums. Some of these seedlings may yet be seen on some of the old farms of this vicinity, though now no longer productive.

A schooner loaded with apples was wrecked on Lake Michigan in 1840 or 1841. Orlando S. Brown, of Bangor, saved the seeds from the apples that floated ashore, which he planted in the latter year. The trees grown from these seeds produced the first fruit grown in the town of Bangor.

C. Engle, of Paw Paw, had observed in 1850, and several successive years, that a few peach trees upon a high knoll on the elevated table lands of the town of Porter blossomed freely, when others upon the common level failed. Observing this fact, he was encouraged to venture the planting of peach trees upon an elevated ridge on his own lands. This purpose he was finally able to realize in 1861, when he planted seven hundred trees—five hundred Early Crawford's and two hundred Barnard or Snow's Orange, as they were called there at that time. These, except one hundred which were planted in hollows and were winter killed, fruited during their fifth year, yielding a net return of \$2,100.

Between the year of his first crop, 1866, and 1882, a period of sixteen years, the net returns from these seven hundred trees was \$3,300 per acre.

In 1860 the late N. H. Bitely planted five hundred peach trees upon the hills near Lawton, which produced their first crop simultaneously with those of Mr. Engle. During the next two years—1867 and 1868—several orchards were planted, and this continued until about one hundred and fifty thousand trees were in orchards in the vicinity, when the yellows made its appearance among them, and this and the cold winters put a stop to planting.

The largest peach crop ever produced in the vicinity of Lawton was that of 1880, although that of 1881 was a good one. Peaches, when they bear, prove to be the most profitable. In 1880 one person cleared \$2,500 from ten acres of five-year-old peach trees, and in 1882 he realized \$1,500 from the sale of three thousand baskets.

The first grape-vines produced at Lawton were propagated by the brothers Lawton from cuttings of Concord, Delaware and Diana, which were procured at Geneva, N. Y. From these vineyards were planted by C. D. and G. W. Lawton and N. H. Bitley, and, subsequently, by A. B. Jones, who, commencing without means, has, by diligence, economy and good judgment in the business of fruit growing, become the possessor of a fine plantation of thirty acres, all planted to fruit, and also a beautiful home.

The grape is the specialty about Lawton, as it is found to succeed finely here. The annual product of the vicinity is about three hundred tons.

A fruit evaporating company was organized at Lawton in 1880. They have a fine building which contains two large Williams' evaporators.

In 1858 N. H. Bitely and Messrs. Bragg commenced the first nursery at Lawton. They grew apple trees and, to a limited extent, other fruit trees and plants, until, in 1865, C. D. and G. W. Lawton joined with Mr. Bitely and continued the business for a few years. Mr. William Kellogg has been engaged in producing nursery stock at Lawton, in a limited way, for twenty-five years. P. I. Bragg, in the same town, but nearer Paw Paw, has been in the nursery business for thirty years.

In the spring of 1874 a nursery association was organized at South Haven as a stock company, under a general law of the State, with a capital stock of \$50,000, of which \$10,000 was subscribed by non-resident parties, and about \$24,000 by residents, a considerable portion of which covered the land required in the business. Of the balance of the \$24,000, payable in cash, only about \$7,000 proved collectible, and this being considered clearly inadequate to the caring for the stock then upon the ground, and to meet the indebtedness of the corporation at maturity, upon a statement of the situation, the stockholders determined to abandon the enterprise, and the association was therefore voluntarily dissolved after an existence of about four years.

A farther individual attempt was made to continue the enterprise, on a diminished scale, and to redeem outstanding liabilities against the property, but these, with the consequent practical control, having passed into inexperienced hands, this undertaking was soon abandoned.

In 1859 the Prospect Hill Cemetery Association was organized at Paw Paw, and thirty acres of the elevated lands lying a short distance south of that village were purchased and laid out for this purpose. On these grounds an observatory one hundred and twenty-seven feet in height has been built, from which, in clear weather, the waters of Lake Michigan, twenty-four miles distant, are visible.

A Van Buren County Agricultural Society was organized on June 28th, 1851, with headquarters at Paw Paw.

An association known as the Paw Paw Valley Agricultural Society was organized at Lawrence, holding its first fair at that place in 1866. Failing from lack of adequate support, it was re-organized on January 7th, 1871, and held fairs at Lawrence for several years, when the enterprise was again abandoned.

Several agricultural exhibitions had been held at South Haven prior to

1885, during which year an agricultural society was organized here, which held exhibitions during that and the following year upon the grounds of a horse association adjacent to the village.

The South Haven Pomological Society was organized in January, 1871, and in April, 1878, a similar society was organized at Lawton, taking the name of Lawton Pomological Society.

In 1871 the South Haven society adopted a trade mark for the use of its members, but, as no inspection or other adequate check upon its dishonest use seems to have been instituted, it ere long failed of the purpose intended, and was abandoned.

Through the energetic action of the South Haven society, aided by the free contributions of the citizens, a large exhibition hall was built upon the public park during the summer of 1872. By invitation, the State Pomological Society held a large and enthusiastic meeting in this hall, accompanied by a large and beautiful collection of fruit, during September of that year.

On June 19th to 21st, 1876, the State Pomological Society again accepted the invitation of the South Haven society, and held its annual strawberry festival at that place.

On December 3d to 5th, 1877, the annual meeting of the State Pomological Society was held at Paw Paw, upon the invitation of leading fruit growers of that place. The meeting was a large and interesting one.

The State Horticultural (late Pomological) Society, upon invitation, held its annual meeting at South Haven, on December 5th to 7th, 1881, with a very full attendance.

The South Haven Pomological Society was re-organized during the year 1882, taking the name of South Haven and Casco Pomological Society.

L. H. Bailey purchased his present farm adjacent to the village of South Haven in 1853, and settled upon it in 1854. His apple orchards were planted in 1855 and 1856. These orchards have contributed very considerably to the dissemination of a correct knowledge of varieties, especially of apples, many of the less common varieties having been planted and fruited by Mr. Bailey.

During or soon after the year 1852, S. B. Morehouse and Randolph Densmore planted orchards north of the river, within what are now the corporate limits of the village of South Haven. This was from four to six years subsequent to the planting of the Parmelee orchard, near Benton Harbor, which was commenced in 1848, and which may fairly be considered as the initiatory step in commercial peach culture in that region. Within the next few years Mr. James L. Reed planted an orchard on what has since been more commonly known as the Thaddeus Hopkins farm, a short distance south of the village. This orchard has within the past eight or ten years fallen a prey to the yellows, and the result has very probably been hastened by neglect consequent upon the death of the proprietor.

The first vineyards in the immediate vicinity of South Haven were planted in 1858, by Orris Church and A. S. Dyckman. The first considerable vineyard of Delaware grapes was planted in 1864 by Aaron Eames, immediately south of the village.

A peach tree nursery was planted at South Haven in 1857, from which he planted four acres of orchard in 1859.

In 1861 John Williams (subsequently the inventor and patentee of the Williams evaporator) settled at South Haven, where he soon after planted a peach orchard and a vineyard.

In 1871 a small experimental plantation of figs was made at South Haven by H. E. Bidwell, with some degree of success. The plants grew and fruited freely, but the necessity for thorough protection during winter proved to be a serious obstacle, so serious indeed that the effort has been abandoned.

Prior to the improvement of the harbor at the mouth of South Black river and the construction of the Kalamazoo and South Haven railroad, the difficulty of transportation to market was a serious drawback upon commercial fruit culture in the lake shore portion of the county. After these improvements had become available, in 1870, the planting of orchards, especially of peaches, pears and grapes increased with far greater rapidity. Doubtless this tendency was increased, rather than otherwise, by the failure of the peach plantations of western Berrien, upon the advent of the yellows with the utter neglect to apply any effective remedy; while the orchardists of western Van Buren, forewarned by this experience, by a general extirpation of diseased trees, were enabled to so far hold the disease in subjection that it proved a comparatively slight restraint upon planters. Its first appearance here was in 1873, although it seems to have followed the railway northward and appeared in the central part of the county at a somewhat earlier date.

A "yellows law," applicable to Van Buren, Allegan and Ottawa counties, was framed by T. T. Lyon of South Haven and enacted by the Legislature of 1874 and '75. The township commissioner appointed in South Haven, under the provisions of this law, failed to enforce it in a case in which diseased trees had not been removed voluntarily, supposedly from unwillingness to antagonize a prominent and influential planter. Be this as it may, the South Haven society appointed a committee to prepare a revised bill, which when matured, was referred to a joint committee of this and the Saugatuck societies, and which was, by this committee, perfected and by them submitted to the State Pomological Society, prior to its transmission to the Legislature. The outcome of this process is the existing "yellows law" of this State, containing provisions which, in practice, must necessarily seriously interfere with its prompt execution. It is believed that no process has ever been issued for the enforcement of its provisions.

This disease made its appearance in the orchards about Lawton during the summer of 1878.

A large proportion of the fruit shipments from South Haven is drawn from the southwester portion of Allegan county, an account of which is reserved to appear in connection with the history of that county.

The South Haven Pomological Society made an exhibit at the Vienna Exposition upon which it was awarded a bronze medal.

This society also contributed a very fine collection of fruits, the growth of 1875, in excellent condition, to the opening exhibit of fruits on May 1st, 1876, at the Centennial Exposition. Contributions were also made to the fall display by C. Engle of Paw Paw, peaches and grapes; B. W. Abrams and J. Q. Morse, apples; D. C. Loveday and A. J. Perrin, variety of fruits; John Rosevelt, Keeler, fruits; A. A. Olds, Decatur, grapes, apples, pears; H. G. Barnes, Lawrence, variety of fruits; George W. Lawton, Lawton, apples and grapes; E. Warner, pears, peaches, grapes and apples; Wm. Jones. — Love and D. Spice, a variety of fruits.

The Centennial judges of pomology report as follows, so far as the fruits of this county are concerned:—

S. Hopkins, Bangor: This exhibit embraces ten varieties of peaches, in-

cluding Early Ann, Early York, Morris' White, Hill's Chili, Jacques' Rare-ripe and Barnard (said to be popular and an abundant bearer); apples, seventy-five varieties. These were on the whole rather superior to the same kinds as usually grown, especially the Baldwin (eleven inches around), Northern Spy, Rhode Island Greening, Red Russet, Blenheim Pippin, Black Detroit (twelve and three-quarters inches), Gravenstein (twelve inches), Chenango, Maiden's Blush and Red Detroit. The last is considered a more valuable variety than the Black Detroit. In the collection is an improved Siberian crab.

H. E. Bidwell, South Haven: Late Crawford, nine inches in circumference, clear and beautiful.

I. S. Linderman, South Haven: Thirty plates of grapes, four varieties; very good.

C. Engle, Paw Paw: Nine varieties of grapes—Martha, Diana, and Wilder, all good; Salem, with small branches, extra large and good berries; Barry, good; Concord, very fine; Ives, extra fine. On the whole, worthy of commendation for superior culture.

A canning establishment was established at South Haven in 1872 by F. I. Parks, using only first-class fruits. About one thousand five hundred cans per day—mostly glass—were put up during the season. The enterprise has since been discontinued. The number of cans put up during the year 1872 was thirty thousand.

The county agricultural society reports: In 1868, apples and peaches as good in the western part of the county.

In 1869 apples were a very large crop, and peaches so abundant that many late ones rotted on the ground. There was a very large display of fruit at the county fair.

In 1871 fruits and vegetables were especially well represented at the county fair.

Early in the last decade the peach, pear and apple orchards of W. H. Gregory, of Pine Grove, in the northern part of the county, were attracting much attention. With the removal of the originator, however, they have, for some reason, ceased to hold the attention of the public.

The orchards of A. S. Dyckman are reported to have yielded, for shipment, in 1864, six hundred baskets; in 1872, twelve thousand baskets. In 1880 he had eight thousand peach trees in orchard, covering fifty acres. In 1886 his orchards are reported to cover eighty acres, and the net returns from these plantations are reported to vary between \$2,000 and \$10,000 per annum.

The orchard products of the county for 1870 were reported at \$135,910.

In 1881 the value of fruits shipped from South Haven, as indicated mainly by amounts paid through the bank at that place, was \$155,012.99.

The following premiums were awarded to residents of Van Buren county by the orchard committee of the State Pomological Society, for the year 1872:—

To D. M. Shoemaker, South Haven, for apple orchard, second premium.

To John Williams, South Haven, for apple orchard, third premium.

To L. H. Bailey, South Haven, for collection of varieties of apple trees, third premium.

To A. S. Dyckman, South Haven, for peach orchard, first premium.

To O. C. Lathrop, South Haven, for peach orchard, first premium.

To H. J. Edgell, South Haven, for vineyard, second premium.

To H. J. Edgell, South Haven, for Delaware vineyard, third premium.

To J. Williams, South Haven, small fruit farm, first premium.

To Dr. Wm. Hewson, South Haven, for ornamental yard, first premium.

For the year 1873 awards were made to the following:—

For apple orchards, to L. H. Bailey, Jeremiah Bridges, W. H. Hurlbut, Joseph Dow, E. R. Sherburn.

For pear orchards, Joseph Lannin, D. C. Loveday.

For peach orchards, J. Daye, M. T. Smith, Jeremiah Bridges, A. Cooke, T. W. Bishop, D. C. Loveday.

For plum orchards, C. T. Bryant.

For the year 1874 awards were made to the following persons:—

For peach orchard, C. Engle, (two premiums).

For quince orchard, C. Engle.

For the year 1875 awards were made:—

For peach orchard, to C. T. Bryant.

For apple orchard, to L. H. Bailey.

For fruit dryer, to H. E. Bidwell.

For the year 1877 awards in this county were made:—

For apple orchards, to L. H. Bailey.

For pear orchards, to C. T. Bryant, Joseph Lannin, C. Engle.

For plum orchards, to C. T. Bryant, C. Engle.

For plat of currants, to D. M. Shoemaker.

For vineyards, to C. Engle, John Williams.

For peach orchards, to D. M. Shoemaker, L. H. Bailey, Joseph Lannin, C. T. Bryant, A. Engle, C. Engle.

For fruit garden, to H. E. Bidwell.

The orchard committee of the State Pomological Society in 1877 found several peach trees in the orchards of A. S. Dyckman, at South Haven, which had been planted seventeen years since, and which measured thirty-nine inches around the trunk, with a spread of branches of thirty feet. The tree measured was an Early Crawford which yielded fifteen baskets of a peck each.

C. Engle, of Paw Paw, says in 1884: "Were I going to plant pears again in this vicinity I would choose the same altitude as for peaches, a heavy soil in good heart. The Angouleme, Seckel, Bartlett, and Church are the only varieties I have found profitable. I certainly would avoid Flemish Beauty, Anjou, Clapp's Favorite, Onondaga, Diel and Louise Bonne, of Jersey. This conclusion I have reached after a trial of more than fifty varieties. The Seckel is the only sort that has been exempt from blight, although Boussock, Angouleme, Bartlett and Church have been reasonably free from the disease."

Snow's Orange peach, which originated as an accidental seedling, in the garden of Mr. Snow, of Paw Paw, and was introduced many years since by Mr. Hall, of that place, has acquired a good degree of notoriety as a market peach. It is very similar to Barnard, which is very possibly its parent. Many persons consider them identical. The Barnard, as is true of several varieties of this fruit, is very frequently reproduced from the seed.

The apple described by Downing in *Fruits and Fruit Trees of America*, as Paw Paw, and by others designated as Rubicon, Ball, Western Baldwin, and possibly by other synonyms, also originated at Paw Paw, from seeds planted by Mrs. Ball. Mr. B. Hathaway exhibited it as an unnamed seedling at a meeting of the Michigan State Horticultural Society held at Kalamazoo, on

Thursday, January 7th, 1858. The society adjudged it worthy of trial, and, upon the suggestion of Mr. Hathaway, it was named Paw Paw and described under this name in the next issue of the Michigan Farmer, from which the description of Mr. Downing was taken. Under the recognized rules of pomological nomenclature this name seems to be entitled to be considered the leading name, the others being synonyms.

About the year 1883 or '84, Mr. L. T. Rawson, of Decatur, observing the prosperity of celery culture at Kalamazoo, undertook the development of a similar enterprise upon the moist mucky soils upon his farm adjacent to Dowagiac creek, near that place. Mr. Rawson's undertaking has been so far successful that not only has he enlarged his plantation, but several of his neighbors, with similar soils, have also embarked in the business. There are now thirty-three acres devoted to this crop.

Onions have also been very successfully and profitably grown upon this soil. These experiments have resulted so satisfactorily that still others are turning their attention to the utilization of this heretofore waste land; and, recently, Mr. Rawson has plowed eighty-six acres of marsh and another person ten acres, for cropping next year.

The county of Van Buren, according to the census of 1884, had, of

Apple orchards, 10,997 acres, 337,054 bearing trees, yielding in 1883, 140,778 bushels of fruit.

Peach orchards, 2,181 acres, 126,793 bearing trees, yielding in 1883, 13,555 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$104,393.

Vineyards, 260 acres; grapes sold in 1883, 135,791 pounds.
wine made in 1883, 15 gallons.

Nurseries, 47 acres; products sold in 1883, \$4,648.

Market garden products sold in 1883, \$3,659.

The shipments of horticultural products from the port of South Haven during the shipping period of 1886, as reported through the press at that place, were:—

Baskets of fruit, 240,672; crates of berries, etc., 25,647.

Barrels of fruit, etc., 11,045; boxes of celery, 66.

MACOMB COUNTY.

This county was laid off by proclamation of Governor Lewis Cass, on January 15th, 1818, with limits much more extensive than at present. Its boundaries were considerably reduced by a second proclamation on September 10th, 1822, although even yet greatly exceeding its dimensions at the present time.

It was named in honor of General Alexander Macomb.

The county seat was located by commissioners, appointed by the governor, at Mt. Clemens, which took its name from Christian Clemens, who settled there, as a farmer, in the year 1800.

Several Moravian missionaries, who had been seized by Indians and brought to Detroit as prisoners, were advised, with the assent of the Chippeway

Indians, to locate upon the Huron (now Clinton) river, for which purpose they were furnished with a vessel and provisions, together with many other needful articles, including two milch cows and some horses. They reached their chosen location, not far from the present Mt. Clemens, on July 22d, 1782, and were soon followed by others. They named the place in memory of their former location in Ohio, New Guadenhutzen. Upon the close of the war complications arose, and the mission was abandoned by all except Mr. Connor and family, who became permanent residents.

Several other persons who had been held as prisoners by the Indians, during the war, upon their release also became settlers in the county.

The first fruit tree planting was done by the Moravians, at New Guadenhutzen. These first trees, says Mr. J. E. Day, of Armada, some of which are still standing, show indications of great age, are of very large size, and of varieties unknown to the orchardists of the present day.

Prior to the war of 1812 few fruits were planted, but when, after its close, settlers came in, apple and pear seeds were planted, and the young seedlings were set in orchards about the dwellings. From 1822 to 1825 orchards were planted in the southwestern portion of the county by Mr. Squires and Mr. Arnold, also by Lazarus Green, of Washington, who became noted as a fruit grower, and had for a long time the largest orchard in the county, and at an early day did much grafting for others.

In the northern portion of the county the earliest planters were Asahel Bailey, Deacon Rogers, Gad Chamberlain, Mr. Gates and others. In 1880 the largest orchard was that of Mr. Canby, covering twenty acres, and containing one thousand two hundred trees of select varieties.

One of the most thrifty and profitable orchards in the county, as stated by Mr. Day in 1880, was that of Charles Perkins, near the village of Richmond, situated on a dry, sandy ridge.

At an early day Thomas Blackett planted an apple orchard of seven hundred trees, upon his farm near Roseville, in the southeastern portion of the county, including over one hundred varieties—quite too many for profit. In 1875 this orchard produced over three thousand bushels of apples, and over \$1,000 worth of fruit was sold, together with a large amount of cider.

There are, about the residence, several very large evergreen trees, among them an Austrian pine, six feet four inches in circumference, forty-four feet in height, with branches twenty feet in length, also several very large pear trees.

Peaches and the smaller fruits are not extensively cultivated, although most farmers aim to provide themselves a succession throughout the season. Mr. Loren Andrews, of Washington, however, had, in 1880, a peach orchard of one thousand two hundred trees, which bore about three hundred bushels.

In 1879 the Secretary of State reports, in this county, 5,458 acres of apples and 700 acres of peaches.

A son of Lazarus Green, writing to Mr. Day, says: "My father was something of a fruit fancier in his day, kept a nursery some fifteen or twenty years, from which hundreds of orchards in Macomb, Oakland and Lapeer counties were supplied."

The soil of the county is mostly sand and clay loam. Mr. J. E. Day, in "A Brief of Horticulture," estimates that an acre planted to the best sorts, should produce, in this section, five hundred bushels of apples annually. There is no danger of overdoing the apple business. The bulk of the crop

goes to Chicago, and there are extensive evaporating factories that use up the remainder.

Peaches are not extensively grown, although there are several orchards of from three to ten acres, consisting mostly of Early and Late Crawfords that prove profitable. Pear tree blight and the plum curculio are prevalent, and these fruits are not extensively grown. Considerable is being done in the way of gardening for the Detroit market.

In 1850 the farm committee of the State Agricultural Society, in speaking of the farm of Hon. Payne K. Leach, of Shelby, say: "It includes a good orchard of about four acres, mostly apples, and of the very best selections, and bears bountifully. The orchard has been set fifteen years, and the whole grafted within seven years. It is the finest orchard and fruit we know of. Mr. Leach has all the varieties of peaches, pears, plums, cherries, etc. in abundance."

In 1868 the county agricultural society reports: "No peach crop in this county for several years. At the annual fair on the 17th to 19th of October, the liberal premiums brought out a very fine display, in spite of the unfavorable season."

In 1869 apples were not more than half a crop; peaches were the best crop for years.

In 1870 the exhibit of flowers was not equal to that of the previous year. The fair came too late to secure many offerings of the numerous varieties of flowers which flourish in the open air in this vicinity. Our people are not wanting in the love of flowers, nor in those domestic sentiments which their cultivation implies.

A county agricultural society was organized on February 5th, 1850, which has maintained an active existence to the present time and which has steadily given prominence to pomological and horticultural interests.

The Union Farmers' Club of Romeo was in existence as early as 1871, at which time a committee appointed for the purpose recommended the following list of apples as adapted to that locality:—

Summer—Keswick Codlin, Red Astrachan, Sweet Bough.

Autumn—Fameuse, Holland (Fall) Pippin, Porter.

Winter—Rhode Island Greening, Red Canada, Baldwin, Northern Spy, Esopus Spitzenburg.

URIEL DAY,
JAMES STEVENS,
J. E. DAY,

Committee.

In 1876 the club made its report to the State Pomological Society, embodying therein many valuable practical hints respecting the management of orchards and the most desirable varieties for planting, and the best methods of keeping and using the fruits.

Another committee of this club appointed in 1875 recommended the following five varieties of apples, viz.: Rhode Island Greening, Red Canada, Northern Spy, Baldwin, and Golden Russet, in the order named.

The Armada Agricultural Society was organized in 1873. Located as it is at the extreme north, it is no doubt intended to more especially accommodate that locality.

The census of 1884 shows in Macomb county of apple orchards 1,719 acres, 266,862 bearing trees, yielding in 1883, 93,549 bushels of fruit.

Peach orchards, 473 acres, 14,704 bearing trees, yielding in 1883, 269 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$56,194.00.

Vineyards, 17 acres: grapes sold in 1883, 3,465 pounds.
wine made in 1883, 44 gallons.

Nurseries, 21 acres; products sold in 1883, \$3,508.00.

Market garden products sold in 1883, \$4,703.00.

OAKLAND COUNTY.

This county was laid out by proclamation of Governor Lewis Cass, dated January 12th, 1819, and commissioners were therein designated to examine the county and report the most eligible site for the seat of justice thereof. This proclamation was to have taken effect from and after December 31st, 1822; but this period was antedated by the issue of a second proclamation, dated March 28th, 1820, perfecting the organization of the county and establishing the seat of justice at Pontiac. A third proclamation, issued September 10th, 1822, established the limits of the county as they at present exist; but with Lapeer, Sanilac, Saginaw and Shiawassee attached.

The county derives its names from the prevalence of "oak openings."

The famous Indian warrior, Pontiac, made this his favorite residence. Hence the name of the town and village. It was first settled in 1818 by the Pontiac Land Company.

The earliest permanent settlement in this county is believed to have been by a party of four persons with their families, who came by way of Mt. Clemens, spent their first night within the county at the junction of Paint creek with the Clinton river (near the present village of Rochester), March 17th, 1817, and located in the town of Avon.

Major Oliver Williams located lands on Silver Lake in 1818, on which he settled with his family in the spring of 1819, cutting his road and bridging where necessary, and finding a few families at Pontiac who had packed in their goods on ponies or on foot.

L. Campau, an Indian trader, on his way from Saginaw to Detroit, on January 9th, 1819, met William Hunter, of Detroit, near Royal Oak, with a gang of men, cutting a road to Pontiac, at which place he was said to have been the first settler.

During 1818 and 1819 lands were located in Avon, Pontiac, Southfield, Bloomfield, Independence, Royal Oak, Troy, Silver Lake, Oakland and other towns.

The tide of immigration thus commenced continued to increase, and, as early as 1830, the agricultural interest had so far developed that an effort was made for the organization of an agricultural society. This movement, however, was not successful, and the effort was, for the time, abandoned.

As in other sections of the territory, the practice here, with most farmers, seems to have been to plant orchards as soon as ground could be properly fitted for the purpose. The demand for trees for this purpose also induced the early development of nursery enterprises for its supply. Among the

pioneers in this interest a noteworthy one was N. Philbrick, of Farmington, who established a nursery in that town as early as 1825, from which numerous orchards were supplied, both in this and in Wayne county, adjacent.

At Troy, in the eastern part of the county, a nursery was also commenced by Charles Hastings in 1836, which supplied trees to the vicinity for a series of years, but was ultimately transferred to Detroit, where it was conducted by Hastings, Hubbard & Davis, and afterward by Hubbard & Davis.

The soils, as well as the climate, are favorable to the success of the hardier fruits, especially the apple, and to these favoring conditions are to be added the consideration that the multitude of small lakes so abundantly scattered throughout the county are a preventive against the occurrence of untimely frosts during spring and autumn.

One of these, known as Island Lake, about five miles southwesterly from Pontiac, contains an island, embracing about thirty-eight acres, on which, at the first settlement of this region, there was found an old, seedling apple orchard, doubtless planted by the Indians, or by French fur traders, who may have established themselves in this vicinity.

The effort to organize an agricultural society, which had been prematurely made in 1830, was renewed in 1849, resulting in the organizing of a county society on the 7th of July of that year.

On June 19th, 1880, the farmers of the town of Avon organized a township agricultural society.

Soon after its organization, in 1849, the State Agricultural Society inaugurated the idea of offering premiums on farms, to be awarded upon an examination by a committee, accompanied by a statement of particulars, and of the system of management, rendered by the owner.

In 1850 such award was made to the farm of Linus Cone, of Troy, an intelligent and progressive farmer, long since deceased, who was long a contributor to the columns of the *Michigan Farmer* and to other periodicals.

In making such award, the committee speak of the horticultural arrangements as follows:—

“The garden was well supplied with vegetables, and with several of the best varieties of strawberries, raspberries, currants, etc.; flowers of several beautiful varieties, and some about the piazza, in front of the house. Adjoining the garden on the north is the fruit orchard. First the peach, pear and plum trees, and some small apple trees; then the bearing apple orchard, with choice varieties, principally winter fruit; the trees well pruned and scraped, presenting a healthy appearance, and in full bearing. The peach and young apple tree ground was planted with rutabagas and pumpkins, and the other part of the orchard with beans, and all promising good crops. The fruit of the orchard was one hundred and twenty-five barrels of apples, with fifty bushels for family use and twenty bushels refuse. No account was kept of peaches, cherries, pears and plums.”

In 1883 this farm again received an award, but as the particulars were very similar to the foregoing, they are omitted.

Linus Cone was so long and so favorably known in Oakland county, as well as in the State at large, as a leading and successful horticulturist as well as farmer, that the following abstract from a contribution by O. Poppleton to the ninth volume of “*Pioneer Collections*” is deemed appropriate:—

Linus Cone was born at Haddam, Conn., October 12th, 1802, and at an early age emigrated with his father to Bloomfield, Ontario county, N. Y. At

the age of seventeen he emigrated, alone and on foot, to Canada West. In the fall of 1821 he came to Avon, Oakland county, Mich., where in 1824 he purchased eighty acres of land, which, during the year 1826, he exchanged for one hundred and sixty acres of land in the present town of Avon, on which he resided till his death, on October 17th, 1875.

Mr. Poppleton says: "Upon this farm he commenced, axe in hand, to carve out of the dense forest a home, a name and a reputation; to stamp his indelible impress upon his surroundings, the time and people with whom he lived, the agricultural interests of his county and State, its literature, and the sciences of his time. He was a vigorous writer, commending such theories and practices as met his approval, and condemning those which by observation and experiment did not meet his views and judgment; turning neither to the right nor left, but going direct to the subject matter in hand, sparing nothing which he deemed contrary to the best teachings of nature, of questionable practices or theories, but commending those that had been tried by practical experience. He took pleasure in communicating his farming experiences to his contemporaries in agricultural pursuits, and contributed liberally to the literature in that interest through the *Country Gentleman*, *Rural New Yorker* and *Michigan Farmer*."

The farm of C. W. Greene, of Farmington, was entered in competition in this class. His orchard statement is as follows: "My apple orchard consists of about seventy trees, all grafted fruit. Of other fruits I have only peaches worthy of notice. My trees have received no injury from insects. Plowing in manure, planting and hoeing among the trees, with careful pruning occasionally, is the mode of treatment."

The County Agricultural Society, in its report to the State Board of Agriculture for the year 1868, state that the apple crop of that year was quite below the average.

The orchard products of the county, as reported by State authority, for the year 1870, were valued at \$205,804.

At the opening exhibit of fruits, the growth of 1875, at the Centennial Exposition at Philadelphia, in May, 1876, the only exhibitor from Oakland county was H. Warder, of Clarkston. At the general exhibit of northern fruits, in September and October, specimens were contributed by H. Walter and Mrs. G. Kirby, of Clarkston, and Mr. Delano, of Oxford.

The State Pomological Society held its winter meeting at Pontiac on February 5th to 7th, 1877, with a large attendance and nearly four hundred plates of fruit on exhibition—an unusually large and fine exhibit considering the late date of the meeting.

The Oakland County Horticultural Society was organized in February, 1882, with S. Van Hoosen of Rochester as president, I. B. Merrit of Pontiac as secretary, and H. A. Wyckoff of Pontiac as treasurer.

There was a creditable show of fruits, vegetables, etc., at the first meeting, and the society started with a membership of twenty-five and a promising future—a promise which, from its subsequent annual reports to the parent society, would seem to have been realized.

In 1883 the State Horticultural Society offered a premium for a display of flowers grown upon country school grounds. This offer brought out a display at the State fair of that year from district No. 10 of Avon, Oakland county. The following is the report contributed to the transactions of the State Horticultural Society of that year by Miss M. A. Nye, the teacher under

whose management the work was done: "This was my second year in the district. I have just finished my fourth term in this district, and live two and one-half miles from the school-house.

"I have boarded at home during this time, and walked to and from school, rain or shine. But with the aid of my pupils, I thought we would improve the looks of our school yard with a flower garden. Our yard contains half an acre, and was fenced on only three sides. The front, which lies parallel with the public road, was not fenced. We thought we would try our luck, but had to work under a great many difficulties. We had only a few poor tools and our hands, but we prepared the ground. Two of the boys took their wheelbarrow and brought a few loads of manure which we mixed with the soil. It was sod ground which had not been cultivated for years, and was very hard work. After the beds were made and ready to plant seeds, I wrote to D. M. Ferry of Detroit for flower seeds and he sent us twenty-eight varieties with a catalogue. With these we proceeded to business by planting the seeds and covering the beds with brush to keep the neighbors' hens from destroying them. Once in a while stock would come into the yard and step on the beds, but with no serious damage. In the blooming season the flowers were admired by all who saw them.

"We gathered flowers from these beds to decorate the grave of a lovely little girl who died while they were in bloom. She was the only sister of one of my pupils, who manifested a great interest in the care of the flowers. I also sent a bouquet to the Evening News, one to the Pontiac Bill Poster, one to the Pontiac Gazette, one to the Rochester Era, and one to the Teachers' Institute held at Pontiac.

"Our fall and winter term commenced the first of September, and we had flowers in the school room as long as they blossomed, and I think the pupils enjoyed a bouquet picked by them from the school yard more than if it had been purchased at the greenhouse. They proved a great pleasure to us all; not a flower was destroyed by pupils. They proved a success.

"I will now give the second year's experience. The district completed the school yard fence last fall, and this spring our assessor came and plowed our ground for the flower beds, which are located on either side of the path. We were very thankful to him for his kindness, for it saved us a great deal of hard labor, as it was sod and had not been cultivated for years. With our hoes, rakes and shovels we succeeded in making it into beds, twenty-two in number, besides what we spaded up in other places in the yard. After we had the beds made I wrote to D. M. Ferry and to James Vick, of New York, and received seeds from both—forty papers in number—twenty-eight from D. M. Ferry and twelve choice ones from Vick. The petunias and phlox were beautiful, and were greatly admired. All the varieties succeeded except the cypress vine. I think the pupils took more interest this year than last in the ornamentation of their school yard. We planted trees on Arbor Day.

"Our school closed on the twenty-eighth of June, and I used to go about twice a week to weed and tend the flowers. My mother would often go with me, and we would work till dark, then come home and do our own work, and in this way we made the flowers a success. I took a bouquet to the Evening News, one to the Michigan Farmer, one to the Free Press, one each to the Bill Poster and the Gazette, of Pontiac, and sent one to the Arion Review. I also took one to the Pontiac Teachers' Institute. School commenced again in September, and we had several bouquets in the school room before frost.

Our bouquet exhibited at the State fair, at Detroit, was the ninth one picked from the school yard. The early frost did not leave us a very great variety. I have this bouquet yet, but it is withered. The scholars promised me they would plant seeds again next year, and I think they will if the seed men make the same liberal offer. I asked them if they considered it a task or a pleasure to cultivate the flowers, and all replied that it was a great pleasure, and requested me to thank you for your interest in them, which I most cheerfully do. I think it will prove a success, and can safely say that seven-ninths of the district are in favor of the flowers, and I assure you the children are."

According to the census of 1884 Oakland county has of apple orchards, 14,626 acres, 475,465 bearing trees, yielding in 1883, 205,626 bushels of fruit.

Peach orchards, 1,093 acres, 44,320 bearing trees, yielding in 1883, 1,394 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883, was \$130,549.00.

Vineyards, 42 acres: grapes sold in 1883, 21,149 pounds.
wine made in 1883, 124 gallons.

Nurseries, none.

Market garden products sold in 1883, \$9,838.00.

LIVINGSTON COUNTY.

This county was set by act of the Territorial Legislature, approved March 21st, 1833. It was organized in pursuance of an act of the State Legislature, approved March 24th, 1836. It was named in honor of Edward Livingston, Secretary of State in the cabinet of Andrew Jackson.

Howell, the county seat, became an incorporated village March 14th, 1863.

Little can be gathered respecting the first settlement of this county, which probably occurred about 1836 or 1837. At least there are accounts of the planting of orchards very soon after this date.

Much of the county is knobby, or rolling, in surface, and is interspersed with small lakes, which, with the character of the soil, adapt it admirably to the production of the hardier fruits. It has, from its earliest settlement, been noted for its good apples and excellent cider. Every farm has its orchard, though but little has ever been done in commercial horticulture.

At Fowlerville, as early as 1838, an orchard was planted by Mr. Nutt, which has proved successful, and bore a good crop last year (1885).

Warren Chase, also of Fowlerville, has two Standard pears forty-two years old, which bear well every year.

The Livingston County Agricultural Society was organized February 24th, 1853. At the annual fair of 1867 the society reported a large display of fruit. Joseph Brown, of Marion, showed forty-one varieties of apples, and other farmers exhibited many kinds. Fine displays were also made of pears and grapes.

During the summer of 1871 the county was sorely afflicted with drought.

The people of Brighton, in 1874, doubtless encouraged by improved trade, consequent upon the then recent construction of the Detroit, Lansing &

Northern railroad, organized a Market Fair Association, which has apparently become a permanent institution.

The people of Fowlerville, in 1884, set aside, laid out, and planted a cemetery, which is named Oakwood, embracing ten acres of land. Cemeteries doubtless exist at other towns, but no information is available respecting them.

Notwithstanding the adaptation of the county for horticultural pursuits, and the universality of orchard planting, the region contributed nothing to the Centennial display of fruits, has never competed for orchard premiums, nor is it known to have a horticultural organization of any kind within its borders.

Livingston county, according to the census of 1884, has of apple orchards, 7,754 acres, 197,701 bearing trees, yielding in 1883, 135,621 bushels of fruit.

Peach orchards, 279 acres, 20,929 bearing trees, yielding in 1883, 1,116 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883, was \$57,941.00.

Vineyards, 35 acres: grapes sold in 1883, 21,635 pounds.
wine made in 1883, -----.

Nurseries, 2 acres; product sold in 1883, \$272.00.

Market garden products sold in 1883, \$1,912.00.

INGHAM COUNTY.

This county was set off by act of the Territorial Legislature, approved October 29th, 1829, and its organization was effected in pursuance of an act of the State Legislature, approved April 5th, 1838, and which took effect on the first Monday of June following.

The county was named Ingham, in honor of Samuel D. Ingham, secretary of the treasury under Andrew Jackson.

Mason, the county seat, was settled in 1838 and was incorporated as a village in 1865.

Mrs. D. L. Case states (in vol. 7, Pioneer Collections) that Elijah Woodworth removed from the State of New York, and, in 1835, located with his family at the present village of Leslie, adding that he thus became the first pioneer of Ingham county.

More recently, however, in a communication direct to the author, Mrs. Case states that the first settlement was at Stockbridge, in 1834, by David Rogers, Thomas Sill, A. Standish and Mr. Law. In her earlier statement (in Pioneer Collections above) she adds that only the families of E. T. Critchett, S. O. Russell, James Royston and Elijah Woodworth were residents of Ingham county during the winter of 1836 and '7, during which winter Michigan was admitted into the Union. From the above it seems probable that the four settlers at Stockbridge may have merely purchased lands in 1834, but delayed a permanent settlement upon them.

David Rogers and Thomas Sill, before mentioned, planted an orchard in the town of Stockbridge in 1836. Peach pits also were, this year, brought from the State of New York and successfully planted in Stockbridge.

In the fall of 1837, or the spring of 1838, A. Standish and Mr. Law, before mentioned, also planted an orchard in Stockbridge; and, during the same period, Henry Clements planted the first orchard in the town of White Oak.

These orchards were all intended for home use. Apple trees have been generally successful, but other classes of fruit less so. Local markets consume nearly the entire excess of fruit tree products.

A. F. Cooley planted the first apple orchard in the town of Lansing, in the spring of 1873, from trees which were found growing upon the banks of Grand river, near the present location of the city of Lansing. Mrs. D. L. Case, of that city, in stating this fact adds: It is not known who planted the trees (or seeds) upon the river bank. Perhaps Johnny Appleseed came to Michigan as well as to other States.

The early orchards were generally planted with seedlings, and since 1860 these have been very generally grafted with improved varieties. Since the commencement of the grafting process the amount of surplus marketable fruit has steadily increased.

There is a retarding house at Lansing, but its capacity and the means employed to delay maturity have not been learned.

In the month of January, 1838, the ground being free from frost, J. F. Cooley planted what he claimed to have been the first nursery in the county.

George W. Lathrop commenced a small nursery in 1848. He is reputed to have been the introducer here of the process known as root grafting. At his death the business passed into the hands of his son, by whom it was continued until his death.

In 1850 James Bignal planted a nursery in the town of Stockbridge.

In 1856 J. C. Harris brought a general assortment of fruit trees and grapevines from Genesee county, New York, which he planted in nursery nearly one mile south of Lansing.

In 1869 G. W. Parks planted a general assortment of fruit and ornamental trees, which establishment is still continued, and is known as the Lansing nursery.

Mr. Claflin commenced a small nursery in the town of Vevay some years since, which, not proving profitable, was soon discontinued.

In 1838 and '9 the "multicaulis" fever occurred and the "agents" seem to have reached this then out-of-the-way region. Mrs. Case remarks: The trees died, the fever subsided, and the agents were the only persons who made any money.

The State capital was, by Legislative enactment, located at Lansing, in the northwest corner township of this county in 1847, at which date there were a few acres cleared and a saw mill and a log house built. Also on the west side of the river there were five acres "slashed" (Mrs. D. L. Case). The executive committee of the State Agricultural Society located the Agricultural College farm three miles farther eastward, and just within the town of Meridian in 1865. The college was opened to students in May, 1857.

The only awards made by the orchard committee of the State Pomological Society within this county were in 1875, when the first premium was awarded to the Agricultural College for ornamental grounds attached to the institution, and another first premium for the plant house connected with the college.

The contributors from this county to the Michigan display of fruits at the

Centennial, at Philadelphia, were G. W. Brown and Mrs. Mary J. Merrill, of Lansing.

The Ingham County Agricultural Society was organized in 1854. In 1869 it reports a superior exhibit of vegetables.

In 1870 the society reports that the fruit crop was very good, especially apples. The trade in apples is fast increasing in the county. Large quantities were shipped this season to western markets at remunerative prices. At the annual fair the display of fruits and flowers was very large and attracted great attention.

The Ingham County Farmers' Club, of Mason, made its report to the State Pomological Society for the first time in 1876. The club takes a large interest in the raising of fruits. The date of its organization is not given.

A large and interesting meeting of the State Pomological Society was held at Lansing on February 18th to 20th, 1879.

In March, 1880, a society was organized at a meeting called at Lansing, which took the name of Ingham County Horticultural Society. It adopted the rules proposed in such case by the State Horticultural Society, to which it became auxiliary. It meets monthly and is believed to be exerting a happy influence upon the horticulture of the county.

Prof. James Satterlee, late of the Agricultural College, in the Transactions of the State Horticultural Society for 1881, states that in this county apples and most other fruits are grown in connection with farm crops. Apples are uniformly most successful on strong upland that had originally a good sprinkling of oak timber. In a few locations peaches are also successful. One orchard of eight hundred trees, near Park lake, about ten miles from Lansing, has borne nearly every season for many years. Pears are not grown to any extent as a market crop, yet the few small orchards and isolated trees in different parts of the county indicate what might be done by judicious management. Plum trees make a vigorous, healthy growth on our strong clay soils, and with good care produce fair crops for many years. The grape succeeds admirably, except in an occasional season, when frost destroys the crop. Duke and Morello cherries succeed on nearly all soils. The Mazzard varieties fail on account of the bursting of the bark and the premature death of the trees. All kinds of small fruits succeed well, but are not yet grown in sufficient quantity to supply the home demand. This is also true of market gardening.

Mr. Satterlee concludes with the following tabular statement of fruits sold in the county during the preceding six years:

Years.	Apples, bushels.	Peaches, bushels.	Grapes, pounds.	Small Fruits, bushels.
1878.....	48,984	781	2,816	575
1879.....	60,870	831	8,770	812
1880.....	78,907	1,736	9,312	768
1881.....	101,778	69	8,025	363
1882.....	65,253	246	19,010	580
1883.....	69,671	342	8,358	1,297

Small fruits include pears, plums, and cherries sold, along with berries.

A plat of ground at Lansing, formerly intended for cemetery purposes, but now known as East Side Park, embracing from ten to fifteen acres of ground, with a somewhat rolling surface, and containing more or less of the original timber growths, has been laid out as a public park, and some of its drives and walks completed and others partially graded. This is alleged to be the only public park within the limits of the county.

A notice of the ornamental grounds connected with the Agricultural College will appear in connection with the history of that institution.

The grounds surrounding the State Capitol at Lansing correspond, in extent, very well with the magnitude of the building, but no effort for landscape effect is perceptible, if indeed such were possible. The chief purpose seems to have been to secure regular slopes and open lawn in every direction—tree and shrub planting being almost wholly confined to the outer walks.

The somewhat extensive grounds of the State Asylum for the Blind, in the northern part of the city of Lansing, contrast favorably, in this particular, with the Capitol grounds, they being more artistically laid out and planted, with the probability that, when the trees shall be well grown, the pleasantness of the institution, at least to managers and visitors, will be decidedly improved.

Similar remarks may apply to the surroundings of the Reform School buildings, except that the institution has been very much longer in existence, and such surroundings consequently more fully matured.

In the matter of a cemetery, the citizens of Lansing have recently prepared for its needs to the remote future, by the purchase of eighty acres of suitable, high, rolling land from one and a half to two miles southeast of the city, about one-half of which has been appropriately laid out and partially improved and occupied.

The soil being quite sandy, considerable expense has been found necessary in the preparation of the more important drives, to fit them to fully withstand the very heavy weights that may be expected to pass over them. This work has been very thoroughly done under the supervision of William Appleton, the city engineer, who has also had much to do with the laying out and general arrangement of the grounds, and who, during the past summer, supervised the grading and preparation of the streets by which it may be reached from the city.

The census of 1884 reports, in Ingham county, of apple orchards 7,985 acres, 252,086 bearing trees, yielding in 1883, 193,503 bushels of fruit.

Peach orchards, 80 acres, 9,821 bearing trees, yielding in 1883, 2,470 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$93,474.00.

Vineyards, 5 acres: grapes sold in 1883, 2,900 pounds.
wine made in 1883, 14 gallons.

Nurseries, 5 acres, products sold in 1883, \$2,900.00.

Market garden products sold in 1883, \$8,435.00.

EATON COUNTY.

This county was set off by act of the Legislative Council of the Territory, approved October 29th, 1829, and was organized in pursuance of an act of the State Legislature, approved December 29th, 1837.

The county seat is Charlotte, which was settled in 1839.

The county was named in honor of John H. Eaton, secretary of war under Andrew Jackson.

The first parcel of land was located in this county in July, 1831, on Grand river, in the town of Oneida. The land remained unoccupied, and was, subsequently, the first land sold within the county for non-payment of taxes.

In February, 1832, the land was purchased, on which the village of Charlotte was subsequently located.

On November 5th, 1835, Bellevue, the first village in the county, was laid out, the first actual settlement having been made here in July, 1833, by Captain Reuben Fitzgerald.

E. W. Barber, now of Jackson but formerly of this county, states that some apple trees were planted in this county as early as 1840, and that, although in many cases neglected and browsed by cattle, some of them are yet living and in good condition.

He farther states that his uncle, Orrin Dickinson, moved to Vermontville in 1838, bringing with him apple seeds from Vermont, from which were produced trees which now constitute thrifty orchards.

He states also that Jay Hawkins, another early settler, brought in and planted seeds, the trees from which are now the best existing reminders of the beginnings of civilization here, and closes with the remark that the planting of fruit and nut bearing trees along highways has been too long neglected.

Esek Pray (Pom. report, 1880, page 220) states that "J. C. Woodbury, of Bellevue, was the proprietor of the first nursery in the southwest part of the county. Jesse Hart, of Brookfield, in the south part of the county, still living, brought apple seeds with him in the fall of 1837, put them into the ground at once and raised a nursery, supplying himself and neighbors. Nathan H. Pray (my father), of Windsor, in the east part of the county, in the fall of 1837, planted and raised a nursery from the seed, having the seedlings grafted, and supplied many in his vicinity. Jay Hawkins, of Vermontville, in the west part of the county, planted the first apple seeds in the county. He also grafted pears in thorn bushes, and from them the first pears were grown. S. S. Church and Walter S. Fairfield started the first peach nursery in Vermontville from pits. The people of Vermontville planted the first fruit seed from the fall of 1836 until the fall of 1837. Star Hoyt, of Sunfield, in the north part of the county, sowed apple seeds about the same time, from which many of the early orchards sprang."

The Eaton County Agricultural Society was organized in the year 1855.

In 1869 an early freeze occurred, by which many apples were frozen before gathering.

The orchard committee of the State Pomological Society in 1872 awarded a first premium to Joseph Gridley, of Kalamo, for a collection of varieties of apple trees. He was also awarded two premiums in 1873: a third premium for an apple orchard for profit, and a first premium for a bearing apple orchard.

The Eaton County Horticultural Society was organized on February 4th, 1882.

C. W. Garfield (Hort. Report, 1884, page 160) says, Eaton is a great apple county. At Eaton Rapids, previous to December 1st, 1884, thirteen thousand barrels had been shipped, and several other towns had done nearly as well. Among the more profitable varieties in the old orchards are Baldwin, Northern Spy, Rhode Island Greening, and Roxbury Russet. On some of the elevated lands peaches have proved very profitable. Blight has made inroads upon pears, but Seckel, Angouleme, Clapp's Favorite and Vicar have been reasonably exempt.

On December 3d to 5th, 1883, the State Horticultural Society held its annual meeting with the County Horticultural Society at Eaton Rapids. The meeting was unusually well attended, interesting and profitable.

During the past season M. H. Bailey, of Windsor, has examined and made notes of two hundred and ninety-five orchards in this county, of which the following is an abstract:—

The soils in Sunfield are mostly heavy clay. Root-grafted Baldwins, in twelve orchards, of twenty-five years' growth, were in good condition. In thirty orchards, of thirty years' growth, trees leaning to the northeast were badly injured on the southwest side.

In Roxand the soil is very heavy clay loam; timber, bitternut, black walnut, beech and maple. In eleven root-grafted orchards, of twenty-three to thirty years' growth, the trees are thrifty, except in depressions in which water stands.

Of ten orchards in Oneida, on heavy clay soil, of twenty-five to thirty-six years' growth, a part are in good condition; others scraggy, with dead or dying branches.

The soil of Delta orchards is clay loam. The twelve orchards inspected were of root-grafted trees; set from twenty to forty-five years; in thrifty condition, and loaded with fruit.

In Windsor the soils are sand, gravel, clay and muck. Twenty root-grafted orchards, set from twenty-two to forty years, much like those of Delta. In six others, some trunk-grafted trees look feeble. Others, top-grafted, look better, and are loaded with fruit.

Twenty-three orchards examined in Benton correspond very closely with those examined in Windsor.

The soil of Chester is sand, gravel and clay. In twenty orchards, of sixteen to forty years' growth, Baldwins, both root and top-grafts, are thrifty. Other varieties also are generally in good condition. Very little difference is apparent between high and low ground.

Heavy clay soil prevails in Vermontville orchards. This is a good town for general farming, and fruit is at its best here. Of the eleven orchards inspected, some trees in hollows are feeble, as well as some natural orchards.

In Kalama seventeen orchards were visited. This town is the special home of the Ben Davis apple. Root and top-grafts appear to be equally good under good management, except in low sags, where trees show disease.

Twenty-three orchards were visited in Carmel. In nineteen of these, from sixteen to forty years of age, the oldest trees where good care had been given, are in thrifty, bearing condition. Old natural trees are mostly decaying at the top.

In nine orchards visited in Eaton, all root-grafts planted from eight to

forty years since, trees on high ground are thrifty. Those in low sags are smaller, mossy and sickly.

The remarks respecting the orchards of Eaton apply equally to those of Eaton Rapids. The town can hardly be surpassed in the production of fruit.

The soil of Hamlin is sandy and gravelly. Root-grafted trees are invariably thrifty. Trees of forty years' standing are loaded with fruit. Natural trees are decaying badly. I found, in this town, thirty-six varieties of apples, besides a good many which I failed to recognize. All, or nearly all, were heavily loaded with fruit. The number of orchards visited in this town is fifteen.

In Brookfield twenty-two orchards were examined, ages from sixteen to thirty years. Sixteen of them were root-grafted, and all were thrifty.

Seventeen orchards were inspected in Walton. The orchards of this town are mostly a mixture of root and top-grafts. Where not too severely trimmed by sheep and cattle, the trees are generally in good condition. Till within the last forty-five years this town and Bellevue were the home of the red man, and many trees of their planting are still growing and bearing. Orchards from ten to thirty years of age are still thrifty and productive.

In Bellevue eleven orchards were examined. This is an excellent locality for fruit culture. Orchards of natural fruit planted in 1835 are yet in a good growing condition. The orchards visited in this town were all root-grafted, and were all in excellent condition.

Of the trees above examined, nine-tenths of the Baldwins were sound and bearing heavily. The Fameuse, Strawberry, Rhode Island Greening, Golden Russet, Roxbury Russet, Pennock, Rambo, Westfield, Red Canada, Ortley, Yellow Belflower, Talman Sweet, Maiden's Blush, on heavy clay soil, had not been visibly affected by the cold winter of 1854 and '55.

On a sandy soil, with a southerly trend, all trees were more or less injured by the intense cold—40° and 42° below zero.

The fruit of the Northern Spy is very badly scabbed. The Baldwin, Wagener, Fameuse, Rhode Island Greening, Rambo, Yellow Belflower, etc., appear to be in their glory this year.

‡ The town of Kalamo can boast of the largest forest tree in the county, and probably in the State. It is (was) a gigantic sycamore. The tree was hollow from the bottom to the top, so that the blue sky could be seen from within it, and someone had cut a door so as to afford an entrance. There are several persons now living who have ridden a horse fully sixteen hands high through that door into the hollow, turned the horse around on the inside and ridden out again. The inside diameter measured between sixteen and seventeen feet.

Eaton county, according to the census of 1884, has of apple orchards 8,846 acres, 273,042 bearing trees, yielding in 1883 177,543 bushels of fruit.

Peach orchards, 175 acres, 12,130 bearing trees, yielding in 1883 4,185 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$86,438.00.

Vineyards, 5 acres: grapes sold in 1883, 1,323 pounds.
wine made in 1883, 3 gallons.

Nurseries, one acre; products sold in 1883, \$70.00.

Market garden products sold in 1883, \$3,380.00.

BARRY COUNTY.

This county was set off by act of the Legislative Council of the Territory, approved October 29th, 1829, and was organized by an act of the State Legislature which took effect upon its approval on March 15th, 1839.

It was named in honor of William T. Barry, postmaster general under the administration of Andrew Jackson. The county seat is at Hastings.

Slocum Banker was the first white man that entered Barry county as a settler (Pio. Col. Vol. 1st, page 112.)

George K. Beamer, in History of Michigan Horticulture, says: "In 1835 Calvin G. Hill settled on what is now the crossing of the two main streets of Middleville, and Henry Leonard about one mile north, on the Thornapple river, and the next year, 1836, planted the first apple and cherry trees. About 1837 William Bassett and William Lewis set small orchards in Yankee Springs township; William Bassett sowed some apple seed in 1837, which was the first nursery, as far as I am able to learn, in Barry county.

"To condense matters—the first orchard set in Barry county was at Middleville in 1836, Yankee Springs in 1837, Johnstown 1837, Woodland 1841, Hastings 1840, Prairieville 1839. The first nursery was planted in Yankee Springs by sowing apple seed in 1837, and in Prairieville in 1839. A second nursery planted in Prairieville in 1841 contained the first root-grafted trees grown in the county. These grafts came from Monroe, Michigan. The varieties were Russet, Baldwin, Spitzenburg, Swaar, Early Harvest, and Seek-nofurther.

"Old trees in this county are healthy on the high lands and on clay soil, but on low lands and river bottoms they are not healthy, which is mostly chargeable to severe winters a few years since, followed by a series of dry summers.

"As to later work, Elisha Kellogg planted two nurseries in the township of Irving in 1844 and sold largely from them for several years. These nurseries contained choice varieties of grafted fruit, but are now sold out, and there are now no nurseries of importance in this county.

"The first fruit exported from this county was in 1859, by Jephtha Parish, from Yankee Springs—a very fine quantity and quality of Baldwin apples."

At the winter meeting of the State Pomological Society, in Lansing, in February, 1879, A. C. Town, of Milo, said: "As regards our fruit prospects, I would say the indications now are that there will be a good crop of apples, peaches, pears and the smaller fruits in this county. As the most of the county is high table land, lying between the Kalamazoo and Thornapple rivers, and interspersed with numerous inland lakes fed by springs, the thermometer does not as yet appear to get below zero, as it does in the valleys on either side of us. In this respect we are highly favored, seldom having a failure of fruit."

The Barry County Agricultural Society was organized in 1856. In its report for the year 1867 it states that the soil of the county ranges from heavy clay and loamy timbered land to light, sandy, scrub oak plains. Timbered lands about one-third, and timbered openings more than one-half.

In 1868 there was a severe drought and but few apples.

In 1869 apples were plenty, but many were injured by early and severe cold. Peaches were very abundant.

In 1870 the vegetables and fruits shown at the county fair were exceedingly fine.

The Woodland Horticultural Society was organized by Secretary Garfield, of the State Pomological Society, on June 2d, 1880.

On February 20th, 1883, a horticultural society was organized at Hastings by Secretary Garfield, with the title of Barry County Horticultural Society, auxiliary to the Michigan State Horticultural Society.

According to the census of 1884, Barry county had, of

Apple orchards, 7,698 acres, 222,784 bearing trees, yielding in 1883, 101,485 bushels of fruit.

Peach orchards, 389 acres, 23,397 bearing trees, yielding in 1883, 6,391 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$48,426.

Vineyards, 37 acres: grapes sold in 1883, 13,760 pounds.
wine made in 1883, 212 gallons.

Nurseries, 7 acres; products sold in 1883, \$936.

Market garden products sold in 1883, \$2,159.

ALLEGAN COUNTY.

This county was set off by an act of the Legislative Council of the Territory, approved March 2d, 1831, and it was organized in pursuance of an act of the same body, approved August 25th, 1835, which took effect on and after the first Monday of September, 1835.

The county seat is at the village of Allegan. The name is that of an Indian tribe in the Alleghanies. Gan, in the Indian dialect, signifies lake.

Secretary G. H. La Fleur, of the Allegan Pomological Society, contributes many of the following particulars: The first settler of this county was Sylvester Sibley, who purchased a homestead in what is now the town of Gun Plains, on June 15th, 1831. A few days later Samuel C. Wells effected a location, and in September they were reinforced by Hull Sherwood. During the next year four more settlers arrived and settled in the same town. During the year 1833 nine more persons were added to this settlement.

In 1834 Elisha Ely (Pioneer Collections, volume 1, page 97, says Alexander Ely), of Rochester, New York, purchased lands within the present village of Allegan. He was soon followed by some of his eastern friends, from whose beginnings has sprung up a village of four thousand people. This and the settlements which rapidly accumulated about it were mainly made for agricultural purposes, though in part for the manufacture of the neighboring pine forests into lumber.

Pioneer Collections (Vol. 7th, page 305,) state that Joseph Fisk came to Allegan (village?) on March 7th, 1834, at which time L. S. Prouty was the only settler. At that time there were no settlers between Allegan and Lake Michigan, and only the family of W. G. Butler at Saugatuck.

HORTICULTURE IN CENTRAL ALLEGAN.

Many, if not most, of the early settlers brought with them and planted apple

and peach seeds, from which sprang many of the earliest orchards, although many of these have been either grafted or cut down to give place to improved varieties.

Many of the peach trees proved to be reproductions of the originals, and a few may have even been improvements upon them. One of these last is the Granger peach, which has been adjudged worthy of a name and a description by a committee of the State Horticultural Society, and is being propagated and planted as a desirable market variety.

In 1844 Daniel Foster, from Rochester, New York, settled in the town of Trowbridge. Having some experience in the nursery business, he commenced planting seeds of apple and peach, which soon grew into a considerable nursery for that early day, and which supplied many of the old orchards now standing in this part of the county. From this nursery came the Granger peach already spoken of.

S. K. Tanner, of Monterey, still has a small peach orchard, mostly of budded trees, which were planted in 1849, and are yet fairly productive.

There was little demand for peaches from without the county prior to 1867 and '68, but about this time the market at Chicago for this fruit began to attract attention, and farmers began the planting of peach orchards with reference to marketing the product abroad.

In 1870 George T. Lay, of Monterey, planted five hundred peach trees, and in 1884 sold the crop therefrom for \$800. Subsequently Mr. Lay enlarged his plantation to two thousand trees.

J. H. Wetmore, of Allegan, planted an orchard of sixteen hundred peach trees, and in the same town another of four thousand trees was planted by J. B. Damont. There were also many others who planted from one hundred to three thousand trees in a single year.

More recently the lower prices of this fruit, together with fear of yellows, seems to have somewhat abated the disposition for peach tree planting, and many farmers are again looking to the apple crop as a source of revenue.

J. H. Wetmore has eighteen hundred apple trees upon his farm, and Peter Dundle, of Monterey, has nearly as many. These orchards have proved highly profitable. Almost every farm has upon it an apple orchard of from one hundred to five hundred trees. The varieties mostly grown are Baldwin, Rhode Island Greening, Northern Spy, Golden Russet, Red Canada, Hubbardston, besides many others which occur less commonly.

W. O. Hudson commenced a nursery at Allegan in 1874, engaging largely in the growing of peach trees. He has continued the business to the present time.

A general nursery was also commenced in the town of Allegan by G. H. LaFleur, in the spring of 1875, which is still continued.

In 1873 a county agricultural society was organized, which, under occasional embarrassments, has maintained its existence to the present time. This society owns a fine parcel of ground adjacent to the village at the northwest, which, while occupied by the society for its annual fairs, is also available and beautifully situated for a village park. It lies within a bend of the Kalamazoo river, which nearly surrounds it. It is elevated well above the stream, and is interspersed with native oak, ash, beech, maple, elm, butternut and black walnut trees.

In 1874 a Union Agricultural and Industrial Society was organized at Plainwell, in eastern Allegan.

The Allegan County Pomological Society was organized December 21st, 1868. On December 21st, 1880, it became auxiliary to the State Horticultural Society. Its meetings are monthly, held, during winter, in the village of Allegan, and more commonly, during the summer, at the residences of country members, or, on invitation, at the halls of granges.

West of the village, upon a very considerable elevation, is located the Central Union School building, which is surrounded by several acres of second growth pine trees.

Near by, and west of the school building, is the cemetery. The grove extends to and partially around these grounds, and to some distance southward. Two streets pass through this grove, constituting it a desirable pleasure resort.

Southeast of the village, and elevated seventy-five feet above the river, is another natural grove, available for park purposes, containing about five acres, through which pass two streets and three cross streets. This grove is mostly white oak, of second growth, interspersed with maple.

On February 13th to 15th, 1878, the State Pomological Society held a very pleasant and interesting winter meeting at Allegan, upon the invitation of the Allegan Pomological Society.

The annual meeting of the State Pomological Society for the year 1879 was also held at Allegan on the 2d to 4th of December, upon a similar invitation from the local society.

The Allegan Journal publishes the following for the year 1879: "One man received \$1,000 for the peaches on less than four acres, without the trouble of picking and marketing them. The sales by another person from an orchard of ten acres amounted to \$4,700. One firm shipped from Allegan to Milwaukee six hundred thousand pounds of fruit."

At a meeting of the Allegan County Pomological Society, held at the residence of J. B. Dumont, in August, 1880, a large party of gentlemen from Kent county were present. The discussion was mainly respecting the disease known as yellows, and, during the meeting, a peach tree affected with the disease was exhibited. This is understood to have been nearly or quite the first proof positive of the existence of the disease in this vicinity.

HORTICULTURE IN EASTERN ALLEGAN.

Lucius Barnes and Nelson Chambers planted the first orchards in Wayland, between the years 1840 and 1850. That planted by Mr. Chambers is still thrifty and productive. The ground has been mostly used as pasture for the last twenty years. The soil is sandy, elevated and dry. The Barnes orchard was planted on light soil originally timbered with oak and pine, and the trees have grown more feebly.

In 1864 or '65 Jonathan Russell planted fifty peach trees, all of which are now living except one, which was killed during the winter of 1874 and '75 by stacking corn around it. The varieties planted were Crawfords, Snow's Orange and Hill's Chili. Two of these Early Crawfords the present season yielded twelve bushels of fruit. This orchard is on very high ground, with a west and northwest exposure. Since coming into bearing it has produced fruit every season, although the crop of 1875 was a very light one.

The next peach orchard was that of John McIntyre, fifty trees of which were planted in 1876, and the remainder more recently. He prefers Hill's Chili first, Barnard second, Louise and Rivers third.

The third orchard is that of C. Aljo, three and four years old.

The fourth is that of Theodore Sessions, seventeen hundred trees, mostly four years old. With him the Alexander bore most heavily this year. His entire crop was nearly five hundred bushels, which were mostly marketed at Fort Wayne, Indiana.

There are now in this township about eight thousand peach trees in orchard, planted within the last five years. The older peach trees, in the more favorable localities, are showing some fruit this year.

The largest peach orchards are those of C. Aljo, Theodore Sessions, John McIntyre, Monroe Durkee and E. H. Byrd. The last has also seven hundred grapes, two hundred quinces, and one hundred cherries—the whole planted within the last three years.

Mr. Asa N——s has a productive vineyard of one thousand vines, a portion of them planted eight or ten years since.

The crop of apples this season is unusually large, but, between the drought and the codling moth, the yield of merchantable fruit is likely to be lighter than usual, as our farmers make no effort to destroy the larvæ of the latter.

There is, as yet, no yellows in this town, although cases are known to exist in the adjoining town of Hopkins. No measures have yet been taken to suppress it.

The increase of injurious insects is already so serious that Secretary Davison, of the Wayland Horticultural Society urges the necessity for the enactment of a law to protect horticulturists against the breeding of such insects in neglected plantations.

Recently, much attention has been given to the growing of small fruits. C. E. Davison has about one thousand Ohio blackcaps, one, two and three years planted, and the older plants bearing abundantly. Others in the vicinity have one thousand plants, two years old, and six thousand mostly blackcaps, planted last spring. A number of persons are preparing to plant blackcaps largely for evaporating purposes.

Many strawberries are being planted. The Captain Jack and Crescent are the most common varieties, although the Vick is becoming popular. Late frosts last spring destroyed fully three-fourths of the crop, except in the more favorable localities, in some of which it was very abundant.

In 1859 or '60 a nursery was commenced by A. E. Sawyer within what is the present village of Wayland, but with the growth of the place, the ground came to be needed for building purposes, and the stock was, therefore, sold out and the enterprise abandoned. Quite a number of evergreen trees were purposely left upon the ground, which have succeeded remarkably well, and are now large trees.

A commercial fruit evaporator has been in operation for the last four or five years with fair success, in the adjacent town of Martin, but the enterprise has now been abandoned on account of the failing health of the proprietor.

The village park—a tract twenty-four rods square—was planted, from two to five years since, with elms, maples, and evergreens, most of which are prospering.

The grounds attached to the high school have, within the last three years, been planted with a variety of shade trees, which are in a promising condition. The village streets have been planted with shade trees. Those planted early are vigorous and healthy; while those planted within the last five years show more or less evidence of weakness.

Elmwood cemetery was planted with maples and elms; but, owing largely to the attacks of the borer, not more than half the trees are now living.

The Wayland Horticultural Society was organized by Secretary Garfield of the State Horticultural Society, on December 19th, 1885, with the following constitution and by-laws, which are given entire, since they are those recommended by the Michigan State Horticultural Society for the use of all its auxiliaries:—

CONSTITUTION AND BY-LAWS OF THE WAYLAND HORTICULTURAL SOCIETY.

ARTICLE I.—NAME.

The name of this Society is the Wayland Horticultural Society, auxiliary to the Michigan State Horticultural Society.

ARTICLE II.—TERRITORY.

The territory of the Society is the Village of Wayland and vicinity, in the county of Allegan.

ARTICLE III.—OBJECTS.

Its objects are those properly implied in its title ; to which may be added such special or local objects, german to the primary ones, as the Society shall deem desirable and expedient.

ARTICLE IV.—OFFICERS.

The officers of the Society shall be a President, two Vice-Presidents, a Secretary and a Treasurer, who shall jointly constitute an Executive Board. Such other officers may be chosen from time to time as shall be found desirable.

ARTICLE V.—TERM OF OFFICE.

The officers shall serve for one year, and until their successors shall be chosen. The term of office shall expire on the 31st day of December of the year for which they were chosen.

ARTICLE VI.—VACANCIES.

Vacancies may at any time be filled by the Executive Board, for the unexpired portion of the term.

ARTICLE VII.—ANNUAL MEETING AND ELECTION OF OFFICERS.

The annual meeting of the Society shall occur on the second Saturday of December in each year ; written notice of which shall be given by the Secretary to each member at least one week before the meeting ; at which meeting the annual election of officers for the ensuing year shall occur, but in case of a failure to elect at that time, such election may be held at an adjourned meeting or at a meeting called for that purpose in the usual manner.

ARTICLE VIII.—POWERS AND DUTIES OF OFFICERS.

The powers and duties of officers of the Society shall be those appertaining to similar officers, under the Constitution and By-Laws of the parent society, so far as the same shall be applicable ; and in all doubtful cases reference shall be had to ordinary parliamentary practice.

ARTICLE IX.—MEMBERSHIP.

Any person may become a member of the Society for one year by paying into its treasury the sum of one dollar : and the wife, and resident unmarried daughters of any such member, may also become members by payment of fifty cents each.

ARTICLE X.—DISPOSITION OF MEMBERSHIP FEES.

The Treasurer shall retain one-half of all membership fees for the use of the Society ; and shall transmit the remaining half to the Secretary of the State Horticultural Society, together with the full address of each person and the sum by which he is represented in such remittance.

ARTICLE XI.—MEMBERSHIP IN THE STATE HORTICULTURAL SOCIETY AND DISTRIBUTION OF ITS TRANSACTIONS.

Every person for whom the sum of one dollar shall have been paid into the Treasury and one-half the same remitted as provided in Article X, shall be entitled to a certificate of membership for the current year in the Michigan State Horticultural Society, and also to a copy of the current volume of its transactions as a perquisite of such membership.

ARTICLE XII.—EXPIRATION OF MEMBERSHIP.

All annual memberships, whether in the auxiliary or parent society, shall expire on the thirty-first day of December of the year for which they were issued ; Provided that in case of a failure to elect the officers of the Society for the ensuing year within the life of such memberships they shall continue for that purpose till such election shall have occurred and till the newly elected officers shall have assumed their offices.

ARTICLE XIII.—AMENDMENTS AND ADDITIONS.

Amendments may be made to this Constitution and By-Laws, or distinct articles added as provided in Article III, at any regular meeting of the Society, by a vote of two-thirds of all the members present and voting ; but if objection be made, the proposed amendment or addition shall " lie upon the table " until the next regular meeting ; provided that no amendment or addition shall be adopted of a character calculated to, in any way, interfere with the harmonious co-working of the auxiliary with the parent Society.

HORTICULTURE IN THE LAKE SHORE REGION.

The following from Harrison Hutchins, of Fennville, is so happily conceived and so compact in its statements, that it is inserted entire :—

When white people first came to this section, about 1835, there was a small peach orchard on " Peach Orchard Point," on the Kalamazoo river, supposed to have been planted by French traders.

In the spring of 1838 James McCormick settled in the southwest corner of Manlius township. Harrison Hutchins settled in Ganges in the fall of the same year. James W. Wadsworth located in Ganges the following winter ; also John H. Billings. Levi Loomis also moved into Ganges soon after.

Mr. Wadsworth planted the first apple orchard about the spring of 1840, partly among logs. About the next year McCormick, Loomis, Hutchins and Billings each planted small apple orchards.

Very soon after was commenced the planting of seedling peaches.

A short time after this Arba N. Crawford settled upon the lake shore in southwest Ganges, near where Glenn postoffice is now located, and as soon as a little clearing was made in the forest, trees were planted.

Settlers came in, and trees also, mostly apples, until the rebellion broke out. About that time people began to turn their attention to other fruits. McCormick and V. R. Wadsworth planted peach orchards about 1864 on a large scale.

About fifteen years since the Chicago and West Michigan railroad was built, and gave us an outlet for our fruit. About the same time the steamers started upon the lake. Then farmers generally turned their attention to fruit growing, a large share of it peaches.

Almost every farmer now has a peach orchard, varying in number of trees from a few hundred to five and even ten thousand. There are large numbers of fine apple orchards, and a few of pears and plums; also small fruit, berry, grape and cherry plantations; but peaches are the main crop.

V. R. Wadsworth relates that when a boy, crossing the lakes, he picked up and pocketed the peach pits thrown upon the deck of the sailing vessel by more fortunate passengers, who were able to afford the luxury. These he planted on his father's (James W. Wadsworth's) farm. From these sprang the first peach trees upon the farm, located in the vicinity now known as "Peach belt."

Before the war small "hookers" (boats) sometimes came to Saugatuck, and carried thence small loads of peaches, half-grown and "fuzzy," to sell in the more northern markets among the lumbermen. Their arrival was hailed by the pioneers as a good opportunity to dispose of a few surplus peaches, although they usually carried apples.

The foregoing gives but slight indication of the productiveness of these extensive orchards, or of the amount of labor and consequent care and system required for their successful management. As a means of illustrating these, the following quotation respecting the orchards of Mr. Harrison Hutchins is extracted from the Allegan Gazette:—

The largest peach orchard in this State, so far as known, is situated upon section 1 in the township of Ganges, and is owned by Mr. Harrison Hutchins, one of Ganges' earliest settlers. It covers ninety acres, of which about seventy are in bearing, and is under the management of his son, Henry H. Hutchins, who owns a sixty-acre farm, thirty acres of which are set to peach trees, making upward of one hundred and sixty acres of orchard, including twenty acres of apple orchard, under the direct control of this gentleman.

A person traveling through this large orchard for the first time, without a guide, stands as good a chance of becoming lost as he would were he taking his first trip through New York City. The different varieties are set out in blocks, and a map of the orchard hangs in the office, so that there is no difficulty in finding any desired variety. Almost every tree in bearing was well loaded this year, and Mr. Hutchins estimates his crop at from 35,000 to 40,000 baskets.

The affairs of the orchard are superintended by Mr. Harry Morrison, and the boys under his charge unite in proclaiming "Uncle Harry" a first-rate overseer.

The fruit is carefully picked and emptied into bushel baskets, which when filled are loaded upon a low wagon built especially for the purpose, and drawn to the packing house, where their contents are emptied upon the packing tables, at which stand the

packers who arrange the fruit preparatory to shipment. All the fruit is graded according to quality, the finest or first quality being put into packages called "squares," and care is taken to have the packing done nicely, so that the fruit shall command the highest price when placed upon the market.

A person who can pack two hundred and fifteen baskets per day is considered a good packer.

From the packing tables the packages are passed to other tables, where nimble-fingered girls quickly cover them with tarlatan, after which they receive the wooden covers and are marked and stacked ready to be drawn to Fennville or Saugatuck, the principal shipping points. There are from ten to sixteen hands employed at the packing house.

Mr. Hutchins ships this enormous crop to several large cities.

Mr. Hutchins is among the few peach growers that remember the Sabbath day to keep it holy. He and his wife are kind and obliging to their help, and there is not a single person in their employ but regards them with the greatest respect. On Sunday all who wish to go to church are furnished with the means to go. If all fruit growers, like Mr. Hutchins, would take their help to church on Sunday, instead of requiring work, they would not be troubled with so many cull peaches the first thing Monday morning.

As an illustration of the importance of the potent influence of the waters of Lake Michigan in the modification of extremes of temperature upon its eastern shore, the following quotation from C. A. Ensign, of Saugatuck, is inserted: "Sunday, December 23d, 1872, at 9 A. M., the thermal degree was -12° to -14° for this place; Tuesday, December 24th, -20° . In both instances the extreme lasted only about an hour. The movement of the atmosphere was from the east, but at Ganges, where a less degree of cold prevailed, the movement was from the south, and not wholly out of the influence of the lake. On December 23d, between the above extremes, the wind was strong from the west (off Lake Michigan), and the thermometer stood very steadily at 2° for the entire day. During the month of January (1873) the coldest noted was -12° ." At this time the lowest temperature at Fennville, six and one-half miles from the lake, was -23° , and at Richmond, in the valley of Kalamazoo river, six miles from the lake, -26° .

D. W. Wiley, of western Allegan, proposed the organization of a horticultural society for that part of the county as early as the winter of 1870-'71. Some progress toward such organization was made during the following spring, and such organization was finally effected on September 30th, 1871. Prior to the completion of the organization, those engaged in the movement held a fair in an unfinished building, with a fine display of apples, peaches, and grapes, together with some fine samples of farm produce. This was preliminary to sending an exhibit to the district fair of that year at Grand Rapids, at which this exhibit received a special premium. This organization assumed the title Lake Shore Agricultural and Pomological Society.

L. L. Lance, of Ganges, contributed a very fine collection of apples from his winter's stock to the Michigan exhibit at the opening of the Centennial Exposition at Philadelphia in 1876, and at the September and October display of the State Pomological Society at this exposition the Lake Shore Pomological Society contributed apples, pears, peaches, and grapes; D. W. Wiley, of Douglas, samples of the same; A. Hamilton, Saugatuck, apples; and L. L. Lance, Ganges, apples.

In 1811 the orchard committee of the State Pomological Society awarded a first premium to M. P. Smith, of Hopkins, for a young vineyard.

In 1812 such committee awarded a first premium to B. S. Williams, of Saugatuck, for pear orchard for profit. Also

A first premium to H. Griffin (postoffice, South Haven), for peach orchard for profit.

A second premium to I. S. Linderman (postoffice, South Haven), for peach orchard for profit.

A third premium to C. S. Linderman (postoffice, South Haven), for peach orchard for profit.

A second premium to H. Griffin (postoffice, South Haven), for collection of hardy grapes in bearing.

A first premium to C. H. Wigglesworth (postoffice, South Haven), for one-half acre of raspberries.

A first premium to C. H. Wigglesworth (postoffice, South Haven), for one-half acre of blackberries.

A special first premium to B. S. Williams & Son, Saugatuck, for general fruit farm.

In 1873 such committee awarded

A second premium to H. J. Linderman (postoffice, South Haven), for peach orchard for profit.

A third premium to A. T. Penniman (postoffice, South Haven), for peach orchard for profit.

A third premium to Wigglesworth & Histed (postoffice, South Haven), for Delaware vineyard.

A second premium to Wigglesworth & Histed (postoffice, South Haven), for one-half acre of strawberries.

A first premium to Wigglesworth & Histed (postoffice, South Haven), for one-half acre of red or yellow raspberries.

A first premium to Wigglesworth & Histed (postoffice, South Haven), for one-half acre of black cap raspberries.

A first premium to Wigglesworth & Histed (postoffice, South Haven), for one-half acre of blackberries.

In 1875 such committee awarded

A first premium to H. J. Linderman (postoffice, South Haven), for a peach orchard for profit.

And in 1877 such committee awarded

A first premium to H. J. Linderman (postoffice, South Haven), for a bearing peach orchard.

From the annual reports of the Lake Shore Agricultural and Pomological Society, it is inferred that at or about the close of the year 1876 its name was changed to Lake Shore Pomological Society, that being the title assumed in its report to the State Pomological Society for the year 1877. In 1878 its secretary in his report gives it the title Saugatuck and Ganges Pomological Society, a title to which it still adheres.

Referring to the year 1879, the Allegan Journal says: "Senator Lewis has good reason to estimate the value of the peach crop of the lake shore towns at \$200,000, and that of the town of Ganges alone at \$50,000 to \$70,000; and no one questions this; while from two warehouses in Douglas one hundred and forty-seven thousand five hundred and ninety-three packages of peaches were shipped this season; and from Fennville one hundred and thirty-seven thousand and five hundred baskets."

In the society's report for the year 1881 the following statement appears: "The wildest prophecies about the extent of the fruit business of this region bid fair to be more than realized. From reliable data I have ascertained that in the three towns of Laketown, Saugatuck, and Ganges more than two hundred thousand peach trees will be planted the coming spring, and there seems to be as much eagerness to extend the area of orchards as ever."

The Glenn Farmers and Fruit Growers' Association was organized during the year 1878. Its report at the close of the year says: "The subjects for discussion during the year have been almost entirely confined to insects injurious to the orchard, and to the peach tree yellows. No new facts have been elicited, but the society proposes to keep at work, and promises to be of real worth to the community in which it is organized."

The association has made no report since that above quoted.

Allegan county, according to the census of 1884, had of

Apple orchards, 19,701 acres, 324,414 bearing trees, yielding in 1873, 112,-706 bushels of fruit.

Peach orchards, 8,367 acres, 484,091 bearing trees, yielding in 1883, 172,-849 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$346,677.00.

Vineyards, 216 acres: grapes sold in 1883, 51,157 pounds.
wine made in 1883, 180 gallons.

Nurseries, 55 acres; products sold in 1883, \$11,977.00.

Market garden products sold in 1883, \$7,483.00.

ST. CLAIR COUNTY.

This county was set off by a proclamation of Governor Lewis Cass, dated March 28th, 1820, and the county seat was, by such proclamation, established at St. Clair. Its organization was provided for, also, by proclamation, dated May 8th, 1821. A third proclamation respecting the county was dated September 10th, 1822.

The county seat is at present located at the city of Port Huron.

The name of this county, with that of the river and lake bordering it upon the east and south is, by many, believed to have been bestowed in honor of Saint Claire, upon whose fete day the Griffin (the first vessel upon the upper lakes) first entered the waters of Lake St. Clair.

Others suppose the name to be derived from Patrick Sinclair, who for several years owned from three to four thousand acres of land bordering upon the river.

Judge Cooley states, (Vol. 7, Pioneer Collections, page 522) in effect, that the French built a fort on the present site of Port Huron in 1686.

As early as 1796 Captain Cottrell, Captain Alexander Harrow, Captain William Thorn and a Mr. Paschal were known to be engaged in lumbering at Cottrellville.

In 1841 three pear trees in good bearing condition, supposed to have been planted by the French, were standing within what is now St. Clair city.

Previous to the above date Jacob Peer planted a family orchard in Algonac.

Mrs. C. L. King (to whom the writer is indebted for very many of the foregoing facts) has a large orchard at Thornton; so also have Mrs. J. Kimball, Mr. John Lamb and John Dingman. Such plantations have quite generally proved successful. Fruit trees are very generally thrifty and successful, and it is a notable fact that when a tree fails the disease occurs first upon the southwest side. (Caused by sun-scald during the hottest part of the day.—Author.)

There are a few orchards in the county planted by French traders, but they are no longer in good condition.

On the south bank of Pine river (at St. Clair), was the old fort St. Clair. In 1820 nothing remained of it, but there was an old apple orchard, bearing an abundance of fruit each year, and some of the trees were larger around than the body of a man. This orchard is believed to have been planted by the soldiers in charge of the old fort.

In 1853 John E. Kitton states that the soil of this county is much varied and well adapted to the successful production of grain and grass. The fruit products comprise all the common classes, which rarely fail to yield bountifully. Apples, peaches, pears and cherries are abundant and command remunerative prices.

A gravelly loam predominates in the lower or southern part of the county, while farther north clay loam is more common.

As early as February 22d, 1854, a constitution was adopted for a county agricultural society.

Port Huron, the principal city in the county, is but indifferently provided with parks. One of these, Pine Grove Park, extent not known, is supposed to be wooded mainly with second growth pine.

There are also in another locality one and one-half acres occupied for park purposes.

In 1884, in a brief of Horticulture in Michigan, Mr. I. H. Butterfield says: "St. Clair county is a good place for a home. Port Huron is its leading town and furnishes a good market. Boats, plying either way, furnish cheap transportation for surplus products. Lands are not very high priced, and locations along the St. Clair river are much sought for homes. It is a delightful place to live. Apple orchards are profitable here, as in counties previously named, as a division of mixed husbandry. Peaches are very little grown, as the winters are rather severe. The country along the St. Clair river is well adapted to pear culture, but somehow the people have not made the most of their advantages in this regard. Plums do admirably and the markets are good. Cherries of the Duke and Morello types do admirably, and are quite profitable. Market gardening in the vicinity of Port Huron is profitably pursued, but since the southern growers have taken advantage of railroad facilities and shipped in quantities of early vegetables from the warmer latitudes, there has been less profit in the business.

LAPEER COUNTY.

This county was laid out and named by proclamation of Governor Lewis Cass, September 10th, 1822, but with limits very different from the present

ones. It was organized by act of the Legislative Council, approved January 20th, 1835, and which was given effect from and after the first Monday of February ensuing.

The lands upon which Lapeer, the county seat, was located were taken up and platted in 1831, by the late A. N. Hart. It has been, for several years, an incorporated city.

The foregoing was the first settlement in the county. In the spring of 1832 settlements were made by J. R. White, O. B. Hart, Alvin McMaster and John Peters; in September by Phineas White, and in 1833 by E. J. White. These settlements were primarily for agricultural purposes, although incidentally a large amount of pine has been manufactured into lumber.

In 1834 orchards were planted for family use by Phineas, E. J. and J. R. White, also by Daniel Turrill.

Almost every farm orchard has been planted with reference to a surplus of fruit for market.

A plum orchard has been planted by W. R. Wadsworth, also a peach orchard at Metamora, by Wadsworth & Traverse.

Raspberries and strawberries have been planted to some extent for commercial purposes.

As the rule, small fruits, and, with the exception of peaches, all the larger fruits, can be and are successfully and profitably grown.

As many as twenty-five or thirty thousand barrels of apples are sent south and west in some years, over the Michigan Central and the Chicago and Grand Trunk railroads.

All other fruits are absorbed by local markets.

A nursery was established at Lapeer, in 1855, by Mr. Young, but the owner went into the army during the rebellion and the enterprise was discontinued.

Several other small establishments have been commenced within the county, all of which have been abandoned.

In 1851 the State Agricultural Society's farm committee report the following statement of George Clark, Jr., of Lapeer, respecting his orchards and their management: "I have one hundred apple trees, chiefly grafted fruit, also pears, plums, and cherries. To subdue bark lice and catapillars, I wash the trees with lye."

In 1858 the Lapeer County Agricultural Society was organized.

In 1868 it reports apples as a fair crop and peaches good.

In 1869 its exhibit of fruits and vegetables was superb, the building devoted to them being filled to overflowing.

Apples were then an average and peaches a full crop. Fruit, the cultivation of which has been neglected in this county, is receiving more attention. Thousands of apple trees have been planted within the last two years, all of improved varieties. A great many grapes are grown in the southern part of the county, also large quantities of peaches.

In 1880 it reports apples a bountiful crop, but winter fruit not keeping well.

In 1871 an agricultural society was organized for the northeastern portion of the county, with headquarters at North Branch.

The Lapeer County Horticultural Society was organized on February 10th, 1882.

In 1884 the winter meeting of the State Horticultural Society was held at Lapeer on February 26th and 27th, upon the invitation of the county horti-

cultural society. Its programme was a full and interesting one, and the sessions well attended.

In his "Brief of Horticulture," Secretary Garfield says: "This is an excellent farming region, and a great deal of attention is given to fruit as an accompaniment of the farm; but very few are engaged in horticulture as a specialty."

In 1884 the county horticultural society reported a membership of one hundred.

In 1885 it still had a large membership, but no regular report was received.

Lapeer county, according to the census of 1884, has of apple orchards, 6,838 acres, 187,816 bearing trees, yielding in 1883, 111,925 bushels of fruit.

Peaches, 140 acres, 7,240 bearing trees, yielding in 1883, 727 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$53,631.00.

Vineyards, 10 acres: grapes sold in 1883, 1,594 pounds.
wine made in 1883, -----

Nurseries, none.

Market garden products sold in 1883, \$360.00.

GENESEE COUNTY.

This county was constituted from portions of Lapeer, Saginaw and Shiawassee, by an enactment of the Legislative Council of the Territory, approved March 28th, 1835. It was organized in pursuance of an act of the State Legislature, approved March 8th, 1836, and which took effect on and after the first Monday of the following April.

The name is that of a county in western New York, from which very many of the original settlers came. It originally belonged to a tribe of Seneca Indians. Je-nis-he-yuh, in the Seneca language, signified beautiful valley.

On August 25th, 1835, an act of the Legislature was approved, locating the county seat at a point on the Saginaw turnpike, near Flint, whence it was subsequently removed to Flint, its present location, which occupies a tract of land reserved by the Chippeway Indians for the children of Jacob Smith, a white Indian trader of much influence with the tribe.

John Todd removed from Pontiac to Grand Traverse (now Flint) during the winter of 1830 and '31, and appears to have been the first permanent settler at this point, aside from Indian traders.

The first land located for settlement within the county was in 1824, and in 1825 a few persons settled in the southern part of the county, mostly from Livingston, Monroe and Genesee counties, New York, and a few from Vermont.

The south half of the county is mostly "oak openings." The north half is entirely timbered land.

An agricultural society was organized in the county as early as February 13th, 1850.

In his annual report for 1867 the secretary says: "Apples, the staple fruit of this county, have been generally a good crop, though they did not realize

the extraordinary promise at the time of blooming. The yield, however, was unequal, some orchards having borne extremely large crops, others but moderate ones. Altogether, we consider the product a full average, and the quality good. Pears and plums were scarce, but peaches, which had almost died out as a crop in this county, are again reviving, and wherever there were trees, plenty of fruit is reported. Grapes thrive well in our climate and soil, and increased attention is being bestowed upon their culture, with gratifying success. Small fruits of all kinds were likewise abundant this year."

In 1868: "The crop of apples was so small as to be not worth securing. Grapes were abundant and fine."

The report for 1869 says: "The past has been an excellent fruit year in this county. As a general thing, the orchards yielded an average quantity of apples, of which the quality was admirable, and the keeping properties superior. A loss in the apple crop was experienced by the sudden, early and unlooked for advent of a severe frost, finding some of the later varieties still upon the trees, which were frozen hard in a single night. You will remember how early the winter dropped down upon us, with no notice of its approach, and permanently locked up the earth while the woods were still in full foliage. Peaches, pears, plums, cherries, etc., bore better than common. Berries of all kinds were very abundant, and the quality of all was good."

The report for 1870 says, in effect: "Apples were a large crop, but they matured too early, seriously impairing their keeping properties. Grapes were abundant and fine, and the quantity is annually increasing. Pears, plums, cherries and most fruits grown here were abundant and good, although peaches were less abundant than in 1869. The liability to winter-killing of the trees is discouraging their increase."

From the report of 1871 we extract: 1871 was the year for a light crop of apples. Accordingly the yield proved small, and the quality but middling. Pear trees, however, bore heavily and the fruit was fine. Grapes bore heavily, but a portion of the crop was spoiled by frost. Peaches were a fair crop. Plums and cherries light. Small fruits were abundant and good.

A district or local agricultural society for the southwestern portion of the county was organized in 1858 at Fenton.

In 1876 fruits were contributed to the Centennial exhibit of the State Pomological Society at Philadelphia by Augustus Root and C. H. Rockwood, who collected and forwarded fruit from Flint; and also by N. T. Thurber, of Fenton, who sent a collection from that vicinity.

A county horticultural society was organized at Flint on February 21st, 1882; and, upon its invitation, the annual meeting of the State Horticultural Society, occurring on December 4th to 6th following, was held at Flint, which, judging from the attendance and the interest manifested by the people of the city, was a very profitable occasion.

The following statistics of the horticultural products of the county are from a paper prepared for this meeting by A. L. Aldrich, of Flint, who estimates the number of acres of bearing orchards in the county at two thousand five hundred. He adds:—

There are ten points at which apple packing is done on a more or less extensive scale, namely, Flint, Fenton, Linden, Swartz Creek, Davison Station, Mt. Morris, Ohio, Geneseville, Rogersville and Grand Blanc. The shipments from these several places the present season are as follows, in bushels:

Flint.....	30,000
Fenton.....	5,000
Linden.....	2,625
Swartz Creek.....	2,700
Davison Station.....	2,500
Mt. Morris.....	10,500
Clio.....	3,500
Geneseeville.....	500
Rogersville.....	3,000
Grand Blanc.....	2,500
Total.....	62,825

Adding 25 per cent for fruit not yet shipped the aggregate becomes 78,500 bushels; the price paid for this fruit will average sixty cents per bushel, amounting to \$47,100.

There are in the county three extensive evaporating establishments, whose aggregate production is fifty tons of evaporated apples, the product aggregating \$16,000. There are in the county nine jelly factories, consuming 32,500 bushels of second grade apples, from which is produced 13,000 gallons of jelly, worth \$9,750. From a still lower grade of apples are produced 9,126 barrels of cider, worth \$25,000. The evaporating establishments produce from the refuse 600 barrels of vinegar, worth \$2,000. The whole, as above, aggregating \$99,850, as the cash value of the apple crop of Genesee county for the year 1882, which is regarded as much below the average.

To the above Mr. Aldrich adds for peaches \$3,000; for pears, cherries and plums, \$3,000; for small fruits, \$3,500; for grapes and wine, \$4,000; for cane syrup, \$5,000; giving a total of \$118,450.

In a short paper by Mr. C. T. Rosenkrans, he gives the names of the best five winter apples for profit, which he names in the order of their value for this county as follows: Red Canada, Baldwin, Northern Spy, Rhode Island Greening and Golden Russet.

In a paper on "Stone Fruits for Genesee County," A. S. Partridge, of Flushing, mentions six of the Mazzard class of cherries as desirable for this county, viz.: Bigarreau or Yellow Spanish, Black Tartarian, Burr, Downer and Governor Wood; also two Morellos, Early Richmond and Late Kentish.

Of peaches he names Barnard, Early and Late Crawford, Coolidge, Hill's Chili, Smock Free, Large White Cling, Tippecanoe Cling and Richmond.

Of plums he remarks that they can be grown in any part of the county, and upon any of its soils. Among those considered most desirable are the following: Green Gage, Bavay's Green Gage, Canada Egg, Cois Golden Drop, Imperial Gage, Lombard, Washington, Prince's Yellow Gage and Smith's Orleans.

In 1883 the County Horticultural Society reports that the bad season had prevented the ripening of sugar cane, and hence no syrup had been manufactured; also that the same cause had nearly destroyed the strawberry crop, and thus interfered with the holding of a contemplated strawberry exhibition.

The report further states that the awarding of premiums at the fair of the County Agricultural Society had been committed to the horticultural society,

which society had proceeded to re-organize the system of awards, with apparent benefit to those concerned.

In 1884 the report states: "A heavy frost the last of May ruined the grape crop almost completely, except in the lake region in Fenton township. * * * Pears, peaches, plums and cherries were reported in June as presenting an exceedingly discouraging outlook. Strawberries were reported as about half a crop, and apples at one-fourth of an average crop. The society made an exhibit at the Northeastern Agricultural Society's fair in September, and, as heretofore, took the first premium in the department in which it was entered."

The report for 1885 shows the values of the horticultural products of the county for this year to be as follows:—

Apples shipped	\$49,382 54
Cider	17,853 00
Apple jelly	4,100 00
Apple butter	150 00
Boiled cider	1,020 00
Evaporated apples	1,170 00
Sorghum	1,300 00
Grapes	1,300 00
Small fruits	2,500 00
Total	\$78,775 54

The census of 1884 reports Genesee county as having of apple orchards 9,280 acres, 291,197 bearing trees, yielding in 1883, 212,543 bushels of fruit.

Peach orchards, 141 acres, 10,202 bearing trees, yielding in 1883, 1,459 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$127,446.00.

Vineyards, 33 acres: grapes sold in 1883, 52,997 pounds.
wine made in 1883, none.

Nurseries, 13 acres, products sold in 1883, \$2,925.

Market garden products sold in 1883, \$7,252.

SHIAWASSEE COUNTY.

This county was formed by proclamation of Governor Lewis Cass, dated September 10th, 1822. As originally formed it included portions of Genesee, Livingston and Ingham counties. It was organized by act of the State Legislature, approved March 18th, 1837, to take effect on the second Monday in May of that year.

Shiawassee is an Indian name signifying strait running. The county seat is Corunna.

William Warren and his family migrated from Rochester, New York, to the township of Shiawassee, in the autumn of 1836. (Pioneer Collections, vol. 8, page 92.)

B. M. Waterman first came to this county in 1839, and moved here in 1841,

locating on the farm upon which he has since lived. (Pioneer Collections, vol. 7, page 572.)

In this, as in other counties, orchards were planted very generally as soon after settlement as proper grounds could be prepared for the purpose.

As early as 1850 the county had become so far improved that the need of an agricultural society began to be felt, and accordingly a county society was organized on the 25th of April of that year.

The report of this society for 1854 says there are many marshes in the south, about one-twentieth of the surface being marsh, the remainder being excellent arable land. At the north, timbered land predominates.

The society's report for 1871 states that fruit, though shown (at the county fair?) in great variety and of excellent quality, has not yielded as largely as in previous seasons, having been materially injured by the drought. The same is true of vegetables generally.

In 1884 seed of amber cane was sent out by the State Agricultural College for trial. The trial in this county, on sandy soil, showed a yield double that of corn upon the same space of ground.

At the winter meeting of the State Pomological Society, held at Lansing, on February 18th-20th, 1879, Mr. J. B. Barnes, of Owosso, says: "In reply to your inquiry touching fruit prospects, I am happy to say that the information, obtained from reliable sources, in different sections of the county, is very gratifying. I cannot learn that the intense cold of January has done any harm. The heavy sheet of snow which has covered the ground for the last six weeks will prove highly advantageous to the coming strawberry crop. Grapes and peaches are unharmed, and from all that I can learn I think the chances for an abundant crop of fruit of all kinds are good."

Reports during 1884 indicate that, especially at Owosso, the small fruit interest has come to be one of considerable magnitude, and that much attention is given to the growing of apples for exportation.

The name of this county is perpetuated in one of its seedling fruits, the Shiawassee apple. The seed which produced this variety was grown in Avon, Oakland county, upon a tree of the old, well known Fameuse, and was sown in Gaines, Genesee county. The tree was transplanted from the nursery to Vernon, Shiawassee county, by Beebe Truesdell, by whom, on coming into bearing, it was proposed to name it Seeknofurther. It chanced to attract the attention of J. T. Elliott, of Grand Rapids, when in the vicinity, who sent specimens to T. T. Lyon, then a resident at Plymouth, Wayne county, who objected to the proposed name as one already appropriated, and, in consideration of its fine quality and extreme beauty, suggested that it be named Shiawassee Beauty, which name was accepted by the originator. The modern rules of nomenclature of fruits requires the dropping of the redundant word, hence it appears in the catalogue of the State Horticultural Society as simply "Shiawassee." The fruit, in color of both flesh and skin, as in texture, aroma, juiciness and flavor, is identical with Fameuse, but is much more distinctly oblate, with a more sunken calyx and of slightly larger size.

It is, moreover, almost wholly exempt from the serious fault of its alleged parent—a tendency to crack and scab in unfavorable seasons and upon old trees. It should, beyond doubt, take the place of Fameuse in all Michigan orchards. It was described in the Michigan Farmer in 1859 and 1860, and also in the Journal of Horticulture for the latter year. It was also exhibited at the meeting of the American Pomological Society at Philadelphia in 1859.

The Owosso grape is a more recent origination by Mr. C. F. Goodhue, of Owosso, in this county. It is said to be a chance seedling, probably from Catawba, with hardiness, size, beauty, quality, productiveness, etc., adapting it to the climate of the northern States. The originator gives the following description: Vine very hardy, a strong grower, canes large and very different from any other vines, never throws up any sprouts or suckers from the roots. Out of five thousand vines we have not discovered one. A bountiful bearer, has not failed of a good crop in eight years. Fruit clusters large and compact, berry round and large, quality excellent, has a sprightly and delicious taste, and for the table, not to be excelled by any grape grown out from under glass, a good keeper, color dark amber, ripens with Delaware from the last of August to the 10th of September.

The foregoing description should probably be accepted with some grains of allowance for the partialities of the originator. The grape has now been a number of years before the public, but has apparently attracted but little attention.

Shiawassee county, according to the census of 1884, has of apple orchards 7,553 acres, 212,686 bearing trees, yielding in 1883, 169,969 bushels of fruit. Peach orchards, 146 acres; 11,206 bearing trees, yielding in 1883, 2,760 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$86,808.00.

Vineyards, 52 acres: grapes sold in 1883, 7,558 pounds.
wine made in 1883, 88 gallons.

Nurseries, 3 acres: products sold in 1883, \$342.00.

Market garden products sold in 1883, \$6,689.00.

CLINTON COUNTY.

This county was set off and named by act of the Legislative Council of the Territory, approved March 2d, 1831, and it was organized by act of the State Legislature, approved March 12th, 1839.

Its name was bestowed in honor of De Witt Clinton, governor of the State of New York, and projector and practically the builder of the Erie canal.

The county seat is St. Johns, at which place a trading post was established in 1858 by Celestin Loranger, of Detroit, with reference to trade with the neighboring Indians, and a grist mill was built about the same time by ex-Auditor General John Swegles; also a saw-mill by Michael Hogan (Pio. Col.).

In 1836 Jesse Munro settled upon one hundred and sixty acres of land in the town of Eagle, which he had purchased the year previous. In so doing he penetrated into the wilderness four miles from any other settler. (Pio. Col., vol. 7, page 437).

Mrs. D. L. Case, of Lansing, a daughter of Mr. Munro, however, states that he was not the first settler in the county, the earliest settler being Captain Scott, on October 4th, 1833; the second was Chauncey Ferguson. Mr. Munro first settled at or near DeWitt; but, in November, 1836, removed to near Portland. She thinks he was one of the first, if not the first, to plant an orchard in that county, getting his trees from Rochester, New York, about 1837 or '8.

The date of the organization of the Clinton County Agricultural Society is not known, but reports of its transactions as early as 1853 show that its organization antedates that period.

*- John Gilbert, late of Ovid, a life member of the State Pomological Society, died during the year 1876. He was one of the most active and progressive horticulturists of the county. In speaking of him the late J. P. Thompson, a former secretary and president of the State Pomological Society, says:—

“I first met him at Grand Rapids in 1873, and again, in 1874, at East Saginaw, where his fruit was wonderfully fair, solid and showy. He was always pleasant, had a good kind word for us all, and his greeting was that of a father blessing his children. In 1874 I said to him, ‘Mr. Gilbert, we hope to meet you again next year.’ ‘Ah, my friend,’ said he, ‘I doubt it. I am an old man. My days for fairs and shows are over. I think this is my last State fair,’ and the tears started from the old man’s eyes; ‘but,’ said he, ‘friend Thompson, don’t forget to send me the life membership certificate to which I am entitled, for I always want to help the society a little every year, living or dead.’ In 1875 I looked for the large display usually made by our old and loved friend Gilbert, but it was not there. He brought a few plates, and said: ‘My friend, I could not keep away, I wanted to see you all; but it is my last State fair.’ He spoke solemnly but truly. We looked to see his white locks at Jackson in 1876, but he did not come. And the veteran and pioneer fruit grower is dead, but his memory liveth and should live in our society. The fragrance of the orchard, when in bloom, surrounds the life and death of John Gilbert.”

In 1884, in “A Brief of Horticulture,” Secretary Garfield credits S. S. Walker, of St. Johns, with the following:

Clinton county is quite a model farming county. Horticulture here is not a specialty, but an accompaniment of the farm, and the society located at St. Johns combines the two in its name and work. Lands are mostly improved and under good cultivation. The apple orchards are the most profitable attributes of the farm, paying as high as \$100 and \$150 per acre. The surplus is readily taken at fair rates by steam evaporators and cider mills. Peaches are rarely grown. Pears and plums are raised by an occasional orchardist, but none as yet for exportation. Concord grapes are getting to be quite plentiful and find a ready market. Small fruits and vegetables are grown to supply the home demand, but recently capital is investing in the small fruit business more largely, and there is no question that the outcome will be satisfactory.

August 5, 1886.

On receipt of your letter, I immediately sent a copy of the questions asked, to some twenty of our old residents, in different parts of the county, asking them for answers to the questions as to their localities, and any general information they might have. I received a few replies and herewith combine the substance of them, which I trust may prove to be of service to you.

DeWitt Township: The first fruit trees were planted by W. W. Webb, in 1837. The trees are yet standing and are thrifty, and are still good bearers. Mr. Webb had fine crops and large prices in the early times of Clinton county.

Riley Township: A. Simons sold, in the fall of 1858, apples from seventy trees for \$600.

Duplain Township: This township was one of the earliest settled in the county, being

the site of the famous "Rochester Colony." In 1837 Wm. H. Faxon planted two bushels of peach pits and a peck of apple seeds. From this nursery the surrounding country was furnished with natural fruit trees. Nearly all of the old orchards in this vicinity are from plantings of these trees, since improved by grafting. In 1842 Mr. Faxon gave to Mr. Louis Coburn, who then lived in the township of DeWitt, all the peach and apple trees he could pile on an ox team, for himself and neighbors, for which he has had the satisfaction of eating many times from the fruits grown from these trees.

Bingham Township: The first fruit trees set in the township were cherries, set by A. J. Halstead, on the farm owned by S. W. Downer, one and three-fourths miles south of St. Johns. In 1844 Wm. Norris set out an orchard. About two years afterwards, in 1846 Chas. Session, of Lebanon, James Soules, of Essex, John Merrihew, of Olive, Wm. J. Bancroft, of Greenbush, David Scott, of DeWitt, David Seavy, of Greenbush, Reuben S. Norris, of Bingham, J. L. Hamer, of Bengal, all set out apple trees, etc., which are still thrifty and bearing.

Peaches: The first peach orchard set out in Clinton county was by Hervey Lyon, in the township of Essex, in 1858. Subsequently a number of peach orchards in the same neighborhood have been planted and have been quite successful. The land in this neighborhood is high and rolling.

Westphalia Township: Anthony Martin came to Westphalia in 1838, at which time there were but three settlers in the township. The year after seeds were planted, and the first fruits raised in this township came from the bearing of the trees from those seeds. The first peach trees were seedlings. They bore bountifully and added largely to the convenience of the population, but, of late years, no especial attention has been given to peaches. About the year 1850 Rev. Fr. Goedetz, for many years pastor of the Catholic church at Westphalia, set out a number of grape-vines and gave special care to their cultivation. His example was followed by a number of his parishioners, and almost every farm has more or less grapes. Wine has been made in considerable quantities, and the sale and culture has been profitable to those engaged in it.

Bengal Township: In the fall of 1839 Benjamin Welch and Morris Boughton each set out one hundred trees obtained from a small nursery in Ionia. In 1840 Hon. Courtland Hill set out one hundred apple trees, the leavings of the same nursery in Ionia; these were all set among the green stumps, and the trees were so small that Mr. Hill carried the whole one hundred on his back. His orchard has been very fruitful and the most successful in the community. He plowed and cropped the ground every year for twenty-five years, and manured it every other year. When the plow caught a root he never backed his team if they could break it up, so allowing the root to run deeper into the ground and to stand the hard winters better. A tree from this orchard measured this season twenty-eight inches in diameter one foot above the ground. Mr. Hill sold in one year forty bushels from one tree for fifty cents per bushel. In one year he sold the apples from one hundred trees for \$500, and had plenty left to make cider and for other purposes.

Duplain: The first fruit trees set in the neighborhood of Elsie were set by Henry N. Cobb and Mr. Gallagher: Mrs. Gallagher brought the trees her husband planted from Chesaning in 1842 on her back, following an Indian trail sixteen miles, with no company except her dog. The trees grew well and the orchard is yet a good one. In 1843 H. N. Cobb brought some trees from Northville. In 1848 and '9 several orchards were planted with good success. In 1853 J. D. Sickles planted a small silver maple for an ornamental shade tree. The tree now stands in front of the "Doty House," Elsie, and is

about two feet in diameter; its branches spread about sixty feet, and it is the largest ornamental tree in the place. Centennial year, 1876, a park was planted on the school grounds. No attention has since been paid to it and it did not succeed.

Victor Township : Dr. Isaac T. Hollister set out the first valuable orchard in this township. Later Bertram Giffes and Chas. Weeks set out fine orchards ; Hon. J. C. Bronson also set out an orchard of peaches, pears and apples. Dr. Hollister engaged to a small extent in the nursery business, but no report has been obtained as to the success or even the extent of it. The orchards mentioned above have produced some very fine crops; that especially of Chas. Weeks and now owned by Chas. Deitrich, produced a crop in 1883 from eight acres which was sold for \$800. In 1845 Deacon Henry Post set out a row of maples in front of his house; they are thrifty and an ornament to the neighborhood. School district number one planted a grove of trees which has since given it the name of the Grove school-house. Some attention has been paid in this neighborhood to the cultivation of ornamental trees, as can be observed in driving through the township.

St. Johns : In 1865 an experienced and competent Irish gardener, named Trainor, came from Ann Arbor, where he had been long employed in setting out and arranging the places there, to arrange the new place of S. S. Walker. He gave such entire satisfaction that he was engaged to arrange the grounds of R. M. Steel, and he was afterwards employed by others in setting out and decorating the lawns and yards of new places, which has made St. Johns celebrated for its nicely kept lawns and streets. In 1859 Wm. M. Snow set out some maples on Oakland st., in front of the property now owned by A. H. Walker, which are now a great attraction to the street.

Careful observers in at least some portions of the country have said that, as late as 1861, a number of large logs, whole and sound, were found lying in the forests, which were undoubtedly whitewood, but it is not probable that there are any specimens of this timber now growing in the forests in the county. On the borders of the Maple river there are a few specimens of the red bud or Judas tree. This is known, in works on Arboriculture, as the extreme limit of the growth of this tree. A few specimens of the Kentucky coffee tree are found in different parts of the county.

The late John Gilbert, of Ovid, took much interest in horticulture, and if he were now living I am sure a very full report could be obtained. The horticultural department of our county fairs is well and fairly represented with a few fine specimens and many varieties and kinds of fruit. I can learn of no nursery enterprise that has been carried on to any extent in this county. A number of small, very small nurseries have from time to time been started, but the traveling agents from the larger nurseries in the eastern States very early supplied all demands and no special attention has been paid to that line of business.

Respectfully,

SAMUEL MARKY.

The present orchards contain most of the standard varieties of apples and pears, with an abundance of plums and cherries.

Ovid is noted, in this part of the State, for its large shipments of small fruits. Peaches have generally failed, and the effort to grow them is mainly abandoned.

An evaporating establishment here produced one hundred thousand pounds of dried apples in 1885, together with eight hundred casks of cider.

In 1885 Faxon and Richmond, of St. Johns, handled ten thousand barrels of apples, evaporated fifty-two thousand pounds of dried apples and manufactured seven car loads of cider.

In or about the year 1871 Mr. Fulkerson, of this county, planted the seeds of a single bunch of Wilder grapes, which produced about sixty plants. About twenty of these fruited in 1878; of the fruit of eight of these, specimens were, in September, sent to T. T. Lyon, chairman of committee on new fruits, who says of them: To my apprehension the result of Mr. Fulkerson's experiment can hardly be esteemed less wonderful than that wrought out by Mr. Rogers in the production of his batch of hybrids, of which the parent of this recent generation is one.

Wilder is one of the finest of the Rogers hybrids, and more or less of these were apparently its equals in quality. So large a proportion of meritorious seedlings is a very surprising occurrence.

Clinton county, according to the census of 1884, has of

Apple orchards, 8,496 acres, 258,119 bearing trees, yielding in 1883, 134,670 bushels of fruit.

Peach orchards, 183 acres, 11,448 bearing trees, yielding in 1883, 3,983 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$67,134.

Vineyards, one acre: grapes sold in 1883, 975 pounds.
wine made in 1883, 27 gallons.

Nurseries, one acre; products sold in 1883, \$75.

Market garden products sold in 1883, \$3,200.

IONIA COUNTY.

This county was set off and named by act of the Legislative Council of the Territory, approved March 2d, 1831, and it was organized by act of the State Legislature, approved March 18th, 1837, to take effect on and after the first Monday of the ensuing April.

The name is that of an ancient Grecian province.

The county seat was established at Ionia in 1836.

W. B. Lincoln, in Pion, Col., vol. 1, page 193, says, in effect, the first settlement was in May, 1833, by the Dexter colony, from Herkimer county, New York, at which time no settlement had been made on Grand river below Jackson. The colony consisted of six families and a few single persons.

Hon. W. L. Webber, of Ionia, learns that in 1834, or perhaps earlier, Louis Genereau settled on Grand river, three-fourths of a mile west of the present village of Muir, where he opened trade with the Indians, and also cleared a parcel of land and planted a seedling orchard of trees brought in for him by the Indians.

In the autumn of 1836 Vine Welch and his father settled in the township of Easton, six miles from the present village of Ionia; the remainder of the family, together with the family of his sister, Mrs. Dye, followed them in the spring of 1837. (Pio. Col., vol. 8, pages 263 to 265.)

Eri Le Valley, George Hosford and C. R. Rust were among the first planters for commercial purposes. Their plantations have proved highly successful and profitable, and are yet in good condition.

The county is a fine fruit producing region—of apples especially. Pears and plums do well, but the sweet or Mazzard varieties of cherries are not fully hardy.

Surplus fruit is largely shipped west, mainly to Wisconsin; also to Minnesota and some to Europe.

Eri LeValley and also a Mr. Kellogg maintain nurseries; also one or two other persons.

Charles Cornell planted a nursery, four miles south of Ionia, fifteen years ago, but having sold his farm he has abandoned the business.

There are preserved groves of native trees in our cemeteries, and many of our citizens have fine groves of planted trees, of almost every variety, for ornamental purposes; yet I have noticed a strange want of what I call good judgment in planting trees, viz., almost universally choosing trees for merely ornamental use, as many of the coniferas, lindens, birches, maples, elms, etc., with very few of the good nut-bearing species. I deem this a lack of good judgment in not making the ground a source of gain to the planter.

I find that the chestnut, which is not a native here, can be successfully grown from the nut by planting it where the tree is to remain, but transplanted chestnuts do not succeed as well.

The foregoing items are transcribed, almost literally, from notes supplied by A. J. Webber, of Ionia.

The Ionia County Agricultural Society seems not to have been organized until 1853, although a movement for such purpose was in progress during 1852, and a report was made for the latter year under date of January 14th, 1853.

A record also exists of the organization of a county agricultural society during the year 1856, which, however, may have been a re-organization of the earlier society.

The agricultural society reports a good show of fruits and vegetables at the county fair of 1870.

In 1871 an organization was effected at Hubbardston, under the name of the Central Fair Association.

Seeds of amber cane, sent to this county for trial in 1884, were planted in a rich loamy soil, and are reported to have been very successful.

The State Pomological Society's orchard committee for 1875, in visiting the vineyards of George Hosford, at Ionia, learned that he commenced growing grapes by planting a vine of Concord in 1854, which he purchased of Hovey & Co., of Boston, for the sum of \$5. From this he propagated plants, which for a couple of years he sold at \$3 each. Still later he sold them at \$2.50, and finally at \$1. Twelve years since (1866) he commenced selling grapes at twenty cents per pound.

In 1871 the orchard committee of the State Pomological Society awarded a premium to George Hosford, of Ionia, for a bearing vineyard.

In 1872 similar awards were made as follows:—

To N. E. Smith, Ionia, a third premium for a Concord vineyard.

To N. E. Smith, Ionia, a second premium for a Delaware vineyard.

In 1873:—

To N. E. Smith, Ionia, a second premium for a Concord vineyard.

To N. E. Smith, Ionia, a first premium for a one-year Delaware vineyard.

In 1874:—

To N. E. Smith, Ionia, a first premium for an apple orchard in bearing.

To N. E. Smith, Ionia, a second premium for a Concord vineyard.

To N. E. Smith, Ionia, a first premium for a Delaware vineyard.

At the Centennial Exposition at Philadelphia in 1876, N. E. Smith and C. Harford, of Ionia, contributed fruits to the September and October exhibit of the State Pomological Society.

At the winter meeting of the State Pomological Society, held at Lansing, February 18th-20th, 1879, Eri Le Valley, of Ionia, said he planted the first peach tree in Ionia county, thirty-eight years ago. His first orchard was well protected by timber on the west and north, but that one bit of experience was enough for a lifetime. Since then he had planted other orchards, and the one that went through the hard winter the best, when the thermometer went 10° below zero, then 20°, then 28°, then 38° below zero, was fully exposed to the north and west. His choice of a location would be one on high ground, with a deep and sharp slope on the north and west sides. Then he would plant evergreens among his orchard trees.

E. Le Valley contributes to the "Transactions of the State Horticultural Society for 1882" the following, which is quoted entire: "The first settlers in this county cut their way through one hundred miles of unbroken forest in 1833; but with all their cares and labors they did not forget to bring with them fruit seeds, pits, cuttings and small trees, and were soon blessed with cultivated fruits."

The first apple trees were planted in the fall of 1833, by George W. Case, Erastus Yeomans, Samuel Dexter and Alfred Cornell, within the present city limits of Ionia. Mr. Cornell also planted apple seeds, peach and plum pits for a nursery in the same year. He sold his first trees in 1836. The first grafting in the county was done in the spring of 1839, in the Cornell nursery.

A nursery was started in the township of Portland about the same time by Willard Brooks and Mr. Hall. From this time forward trees were planted by nearly every new comer, and grafting soon followed the planting. Apple orchards were planted from 1836 to 1839, by Alonzo Sessions, John E. Morrison, William Babcock, Levi Taylor, Mr. McKelvey, Porter Place, Mr. Chubb, Charles Gott, Mr. Knox, Mr. Brooks, Mr. A. Newman, and many others. From 1839 a general assortment of fruit was added to orchards.

The first peach orchard was planted by Eri Le Valley in the spring of 1839. Elder John VanVleet, of Palo, planted an orchard of peaches about the same time, all seedlings, the pits being brought from the State of New York. These trees bore fruit in 1842. In 1847 peaches were sent to Milwaukee. By grafting and budding the best varieties were secured, and this, together with good care of the orchards, has made Ionia county what it is to-day, one of the best fruit counties in the State.

The grape, one of the best fruits we grow, was planted first in 1844. The Isabella and Delaware varieties first, and a few years later the Concord was introduced here by Mr. George Hosford from Massachusetts. It is now the leading variety in the State. Although the grape is not a specialty in the county, the fact that over one hundred tons were grown in 1882, will give some idea of what we are doing in fruit culture.

The annual meeting of the State Pomological Society was held at Ionia in December, 1874, upon the invitation of the Ionia County Agricultural Society. At this meeting a committee of arrangements was appointed with reference to the needful preliminary arrangements for the approaching Centennial Exposition at Philadelphia.

On April 24th, 1880, the South Boston Horticultural Society was organized in the town of Boston, near the west line of Ionia county. More or less of the members were residents of the adjacent county of Kent. The society held several meetings during the year, and much interest was manifested; but the interest seems not to have been permanently maintained. Since its report for 1883 nothing has been heard from the society, which seems to have transferred its interest to the grange.

The Ionia County Horticultural Society was organized March 25th, 1882.

The State Horticultural Society held its summer meeting at Ionia, on June 26th and 27th, 1883, at the invitation of the county society, with a good attendance from abroad, although the local attendance was sadly interfered with by almost constant rains.

In "A Brief of Horticulture," Mr. Le Valley says: For a period of thirty years the peach trees about Ionia have borne twenty-one crops, so that even at this distance from the lake, in favorable locations, peaches can be profitably grown. The most approved methods of culture is to select, in the beginning, a site that has the best air drainage and excellent soil, thereafter, depend upon good cultivation rather than stimulating manures.

Owing to the necessity of the tedious fight with the curculio, not enough plums are grown to supply the home demand.

Large quantities of grapes are grown and are found profitable. Mr. Le Valley thinks that grapes will prove more profitable than wheat, even if sold at not more than two cents per pound. He advises the liberal use of ashes as a fertilizer.

The following is extracted from the Detroit Tribune of September 30th, 1876. Such an undertaking, even under very favorable auspices, may be fairly regarded a bold one, in a direction in which ultimate success is usually considered quite problematical:—

The silk factory at Belding is nearing completion. The building is 45x160 feet. In addition to this building there will be a boiler house 19x34 feet. The factory will be built entirely of brick, with a composition roof. The first floor will be of concrete and cement. It is to be three stories high and will cost, exclusive of machinery, \$12,000. A tower 16x18 will grace the front of the building, and will also serve as the main entrance. The factory, when ready to commence operations, will give employment to between 200 and 300 hands, a good share of which will be imported labor.

Ionia county, according to the census of 1884, has of

Apple orchards, 8,366 acres, 262,693 bearing trees, yielding in 1883, 121,733 bushels of fruit.

Peach orchards, 586 acres, 43,007 bearing trees, yielding in 1883, 9,015 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$72,103.

Vineyards, 47 acres: grapes sold in 1883, 14,755 pounds.

wine made in 1883, 44 gallons.

Nurseries, 6 acres; products sold in 1883, \$504.

Market garden products sold in 1883, \$5,028.

KENT COUNTY.

This county was set off and named by act of the Legislative Council of the Territory, approved March 2d, 1831. This act only included sixteen townships. The county was organized by an act of the State Legislature, approved March 24th, 1836, to take effect from and after the first Monday in April next ensuing.

In 1849, by act of the State Legislature, eight townships were added to the county at the north, increasing its area to twenty-four townships.

The county was named in honor of Chancellor Kent, a celebrated jurist of the State of New York.

The county seat is located at Grand Rapids.

A missionary station was established, at what is now Grand Rapids, in 1825, which was removed soon after the Indian title to the lands north of Grand river was extinguished and the Indians removed.

During the year 1833, Mr. Barrigau, a Catholic missionary, built a school-house and chapel at Grand Rapids, on the west side of the river, but this mission also was ultimately abandoned.

Rix Robinson located a trading post at the present Grand Rapids, in 1821, also one at Ada, where he resided. His brother also was located on Grand river, a mile below Ada.

Louis Campeau also established a trading post at what is now Grand Rapids, in 1826, he being the second person, aside from missionaries and their assistants, to locate in the lower Grand River valley, although Louis Genereau may have preceded him, in Ionia county, during the same year.

Previous to 1832 there were no white settlers in the county except those connected with trading posts or missions. During this year Luther Lincoln (probably the builder of the first grist mill in Plymouth, Wayne county, a few years before) came to Grand Rapids, he being the first immigrant proper.

In 1833 Louis Campeau and Lucius Lyon, each separately, located and platted lands for village purposes, upon portions of the present site of the city of Grand Rapids. The portion platted by Campeau was named Grand Rapids, that platted by Lyon was farther up the stream and was named Kent. The latter name has fallen into disuse, and the whole has long since come to be known as Grand Rapids.

Grandville, in the township of Wyoming, was, in fact, the location of the first actual settlement. The first lands were located here, the first clearings made, the first soil broken by the plow, and the first farm crops grown. This settlement dated from 1832, when lands were entered upon by Luther Lincoln, Robert Howlett, Amos Gordon and Stephen Tucker. They came in the fall of 1832 and raised crops of their own planting in 1833. Lincoln took up what was the paper city of Grandville, platted, probably, in the latter year, and upon this ground raised the first corn grown as a farm crop.

The first house of any description built in Wyoming by white people, was a log shanty built for Lincoln in the fall of 1832.

Dr. Willson, a young medical graduate, came to Grand Rapids in 1833, when almost the only inhabitants were Campeau and his dependents. He was helped by Campeau to the needful means for the practice of his profession, and became a very successful and popular physician of the growing town.

During the year 1833 what came to be known as the "Indian mill" was built upon a small stream which enters Grand river from the west, in the upper portion of what is now the city.

Before the close of the year 1833 five colonies had located within the lower Grand river valley, one each at Lyons, Ionia, Grand Rapids, Grandville and Grand Haven.

A volume entitled "Memorials of Grand River Valley," at page 35, states that there were extensive Indian clearings at what are now Lyons, Ionia, Lowell and Grand Rapids. That at the Rapids was west of the river, extending from Mill creek to within a short distance of the plaster mills, but not reaching far back from the river.

The settlement of Kent county can hardly be said to have fairly commenced till 1836, about which time a location was effected at what is now Lowell, where, during this year, Sylvester Hodges planted the first apple trees, one of which was said to be yet living in 1875.

The government lands north of Grand river were not offered for sale till August, 1839. Many settlers had gone on and improved tracts of these lands in advance of the sale. Hard times and scarcity of money rendered payment at that time difficult, and in some cases impossible. Fearing the competition of speculators, some of these settlers borrowed the money at exorbitant interest and bought their lands, while others were left no alternative but to leave them subject to entry by others till the money could be earned or otherwise secured for the purpose.

In 1835 a company was organized by Lucius Lyon and a commencement made at hydraulic improvements on the east side of the rapids of Grand river. This enterprise brought in many laborers and mechanics, most of whom became permanent residents. At the close of the year the population of the place had increased to about three hundred persons.

In "Memorials of the Grand River Valley" John Ball says of settlers in northern Kent in 1842 there were in "Oakfield Mr. Tower and sons, Mr. Davis and Mr. Crinnion; in Courtland, Mr. Beers and four or five other families; four families in Cannon, one in Grattan, but few in Plainfield and none on the road from there to Grand Rapids."

Here, as in other localities, the planting of fruit trees followed closely upon the occupancy of lands. The earlier plantings were mainly for a home supply. Planting for commercial purposes was not done, if indeed thought of, until the growth of the west, and of western cities, and of Grand Rapids especially, had created a market demand for fruits.

Mr. Asa W. Slayton says of eastern Kent, that apple trees planted there prior to 1850 were mostly seedlings; those planted subsequently were more commonly grafts.

He adds that for forty years past peach trees have not averaged over ten years of life, cherries not over fifteen years and dwarf pears less than eight years, except when planted deep enough to become standards by rooting from the pear.

He has hauled peaches ten miles and sold them for 25 cents per bushel, and, when scarce, for \$2.50 and \$3.00 per bushel.

He once picked eighty pears which measured a full bushel from an Onondaga pear tree four years planted.

J. D. Alger (grandfather of A. A. Crozier, who supplies this information) planted a quantity of peach pits in 1855, a few miles south of Grand Rapids,

which were killed to the ground the second winter, but which grew again from the stumps, and bore well for many years. The fruits nearly all resembled Crawfords. These trees were all killed by the severe winters following 1810, except a few trees of late clings, which continued till within a year or two. His apple orchard, planted in 1860 or '61, was killed at the same time, except a few trees of Golden Russet and Talman Sweeting.

Deacon Abel Page is said to have planted the first nursery at Grand Rapids, if not, in fact, the first in Grand river valley, soon after his settlement here, about 1836, or not long there thereafter. Nurseries are also said to have been planted at an early period by William I. Blakely, and also by George C. Nelson, none of which have continued to the present time.

Orin Trumbull planted the first nursery in eastern Kent, at Grattan, in 1848. It at no time contained more than twenty thousand trees, and was continued less than ten years.

Noah P. Husted planted a nursery in 1862, six miles south of Lowell, on a half acre of ground. In 1863 three acres were added. In 1864 eighty acres were purchased, and forty thousand apple trees and an assortment of other fruits were planted. The area was rapidly enlarged until, in 1872, two hundred acres were occupied with a general assortment of nursery stock, and the annual sales amounted to \$50,000. Ultimately the establishment collapsed, going into the hands of a receiver.

As early as 1870 commercial fruit culture had become an important interest, the value of fruits produced and sold in the county in that year being \$141,847, and that of garden products amounting to \$12,483.

In 1872 the late Edward Bradfield (who resided on the Grand river flats at Ada) writes: "I am convinced that we in this locality are to witness during the present spring by far the greatest destruction of, or damage to, grapevines, fruit trees, and nursery stock since the commencement of the cultivation of fruit. Forty degrees below zero is bad enough, but when, as has been the case several times during the past winter, the thermometer changes, in from twelve to twenty-four hours, from fifteen to twenty degrees below zero to forty or fifty degrees above, we have reason to fear the result, and I am not surprised to find apple tree limbs an inch or more in diameter very much injured."

The following, from a History of Michigan Horticulture, by Secretary Garfield, contains such a mass of condensed facts respecting the horticulture of this county that it is inserted entire:—

The earliest history of horticulture in Kent county is connected with Grand Rapids, as a French trading post. Lewis Campeau, previous to 1834, had improved a piece of land extending from the present site of the Rathbun house, on the corner of Monroe and Ottawa streets (now a commercial block) to the Eagle hotel, and thence to the river bank. This was a vegetable and flower garden, with shrubbery and trees scattered through it and a few fruits. The most attractive thing about it was the flowers, and it was a place of resort for whites and Indians. The latter used to land from their canoes and go up through the garden to Mr. Campeau's house which was till recently a portion of the front of the Rathbun house, now the Widdicomb Block.—WRITER. An old canoe answered for a propagating bed, in which to start things before they were planted in the garden.

In 1835 Abel Page came to Grand Rapids, where he brought his family in 1836, and located on the bank of the river, near the foot of Huron street.

Mr. Page and John Almy, his nearest neighbor, started gardens upon the bank of the river, and planted in them such things as they brought from the east and could get through the mails from friends, in the form of seeds and slips. They also made some selections from the woods. It was in Mr. Page's river garden that the first tomatoes were raised in the Grand river valley. They were a great curiosity, and grown as ornamental plants and called "love apples." There was but one person in the country that would eat them, and that was the school teacher. This was a matter of astonishment to the people, and at first dire consequences were expected as a result.

For a good many of the first things planted in the gardens of the settlers they were indebted to the kindness of uncle Louis Campeau, who grew nothing to sell, but gave many things away.

In 1838 Mr. Page moved up on Bridge street hill and planted another garden with a sort of nursery attachment, the whole occupying perhaps three acres. This was the year of the great flood in the river, which occurred in February. It was in this second garden that Mr. Page grew *Morus Multicaulis* and raised silkworms, dealing in the cocoons. It was about this time the Rohan potato had such a great run. Mr. Page raised specimens that would weigh two pounds, and sold them for seed at the rate of from \$16 to \$20 per bushel. The fruit in this garden was grown largely from plants found in the woods. Mr. Page and his sons gathered gooseberries, currants, raspberries, and blackberries, as well as plums, from the valley of Grand river, and by careful selection succeeded in growing very fine, smooth gooseberries, of large size; black caps were grown that rivaled the cultivated sorts in size and quality; white blackberries were found and propagated, and plums were found, large and delicious, that ripened as early as August. All these, added to slips of cultivated fruits and ornamental shrubs, made the nucleus of the future nursery.

The first apple seeds planted were from fruit gathered from the old French trees about Detroit, and shipped to Grand Haven around the lakes, and from thence up the river in Mackinaw boats. The apples were eaten with the understanding that the seeds should be saved, and no guest was treated to any of the fruit without this proviso. A quart of seed thus obtained were sown. At the same time a bushel of peach pits were planted, producing trees that were readily sold, without budding, at good prices.

Mr. Page grew the wild cranberry here, and his garden was a resort for people who wished a feast of fruit. He also raised about the first melons grown in the country.

Really the nursery business proper in Kent county was started by Abel Page and sons, in the year 1845. It was planted north of Coldbrook, and the first ten thousand root grafts were purchased at Monroe, of one Hartwell, a nurseryman there. Two-thirds of these were apples, the remainder divided between pears, cherries, plums, etc. To these more were added rapidly, until in two or three years the number of trees in the nursery reached two hundred and fifty thousand, and for nearly twenty years about this amount of stock was carried.

In 1850 the first mammoth pie-plant root was brought into this county by the father of John B. Colton, in a pot swung under his wagon. From this Mr. Page secured a slip for one dollar, and the next year sold five dollars' worth of plants from it, and two years thereafter sold Judge Withey enough pie-plant for Independence day's dinner for \$2.00.

The first Lombardy poplar was brought into the county by Samuel White and planted near the head of Stocking street. From this slips were taken to stock the Coldbrook nursery. When getting the first nursery stock at Monroe, Mr. A. T. Page secured a quart of seed of the common yellow locust. This was planted, and from it within a few years over \$2,000 worth of trees were sold.

A few trees of the very best sorts were imported from Hodges' nursery at Buffalo, by Page, while he was starting his nursery. The most of these were sold again, but a few were retained and planted from which to get grafts and to use as an advertisement of the nursery as they came into bearing. The first fruit thus grown was very precious and was preserved with the greatest care. The first trees sold were seedlings, and customers asked no questions. They were glad to get anything called a fruit tree, but as soon as the first grafted trees bore more anxiety was shown to get good varieties.

While waiting for fruit from the first apple trees, some one chanced to discover a fine grove of thrifty apple trees upon the bank of a small stream, just upon the outskirts of the settlement. The discoverer commenced to dig them, but as soon as the fact became known nearly half the people of the town resorted to the place to secure trees. When, during the second year after their removal, some of these trees came into bearing, the planters were much disappointed at the discovery that they were native wild crab apples.

The root grafts brought by Page were some of them sold at three years of age, and distributed through Kent, Ionia and Ottawa counties.

Abel T. Page, a son of Abel Page, who was associated with his father in his nursery enterprise, states that his father died in 1854, but that he continued the business until 1859, when it was sold out.

About 1855 Hiram Rhodes established a nursery on the river, just below Ada, and H. N. Peck started about the same time in the town of Grand Rapids. The Kellogg nursery was started a little later, on the hill between Fountain and Fulton streets, and was afterwards purchased by George Nelson. As soon as the Detroit & Milwaukee railroad was completed to Grand Rapids, nursery stock, the refuse of eastern nurseries, was shipped into the Grand river country and sold at rates far below what the stock could be grown for here, and hence the business was gradually dropped. Soon after this the Husteds started near Lowell and ran a large nursery business until 1873.

In 1836 Mr. Robert Hilton came to Grand Rapids, and the only two orchards started that were talked about then were those of Burton, in Paris, and Chubb, at Grandville. Mr. Hilton's farm was in Walker, and in 1840 he planted fifty apple trees about forty rods from the river. In 1845 he planted three hundred more grafted apple trees, purchased of George Barker, who had a small nursery out on Bridge street west, near the city limits, and of a small nursery that stood south of Monroe street, near the site of Aldrich's block. The orchards are yet standing, and before Mr. Hilton left them, in 1848, some of the trees bore well. From two trees of Fameuse, in one year, (probably 1848) he took twenty-one and one-fourth bushels. He grew peaches on the land near the river, and in those days the locality seemed very free from frosts, even more so than the higher ground.

The towns of Caledonia and Bowne were originally one, and the very first trees taken there had a very interesting history. Mr. Reuben H. Smith, in 1840,

was returning from a trip outside the county, by way of the Grand river crossing at Lyons, and as he came to the ferry he found a man standing disconsolately with a bundle of seedling apple trees beside him. While arranging to cross with the ferryman he inquired of the stranger what was the matter, where he was going, etc., ascertaining that the man was entirely out of money and could not pay his ferriage, and was on his way to Ionia, hoping there to dispose of his trees for a little cash. Mr. Smith had compassion on the man and paid the fee, taking him over the ferry. The man expressed great obligations, and as they walked toward Ionia together they talked apple trees, prices, etc., and finally struck up a trade, the result of which was that Mr. Smith took the bundle of seedlings into Bowne. These trees were mostly planted by Asa and Loren B. Tyler. Charles N. Foster and William A. Beach were then little boys, and each was given a nice, straight seedling for his own. Foster's bore first, and in 1863 it was reported to have borne more than ten bushels of fine fruit. The two trees are now living and bearing crops regularly.

Frederick Thompson and Isaac Wooley planted some trees on what is now known as the Jonathan Thomas estate as early as 1837, and a Mr. Kent planted seedling apples about the same time. About 1840 Peter and John Malcom, Daniel McNaughton and John A. Campbell planted seedling orchards in the same township.

Paris and Gaines were originally one township, and the very first trees planted in this town were on the Barney Burton place, now known as the Garfield farm. Mr. Burton started a seedling nursery here, and furnished a good many trees to the early planters in his own town. Mr. S. S. Buck, on section 34, planted an orchard from this nursery in 1844.

About 1840 A. L. Bouck had a small nursery on what is now the line between Paris and Gaines, on the old Kalamazoo road. As early as 1838 Foster Kelly and Mr. Blaine brought peach trees from Orleans county, New York, and planted in this township, near where they now reside. J. W. Woolcott, in this town, planted seedling apple trees in 1843, and top-grafted them. Robert Jones was an early planter in this township, and brought his trees from Adrian, while the Brewers secured their first nursery trees in Ypsilanti. There is now a small nursery in Caledonia, on section 36, owned by J. B. Proctor & Son.

About the time when Mr. Bouck and Mr. Burton had their nurseries, Mr. Godwin, in Wyoming, started quite a variety of trees on the new Kalamazoo road, which was well patronized. Remains of the nursery are yet standing, on the place owned by Augustus Godwin. S. M. Pearsall is supposed to have planted the first orchard in the town of Alpine; he brought the trees from Troy, Oakland county, in 1843. They were brought in wagons, and cost him, when planted, about \$1 each. Mr. Pearsall brought into the country from Avon the White Astrachan, or, as he then called it, Transparent Moscow. Very soon after this Mr. Noel Hopkins planted his orchard in Alpine.

One of the oldest apple trees in Kent county stands in the garden of the writer (Charles W. Garfield), planted by Barney Burton, the body of which is five feet in circumference three feet from the ground, at a point below the enlargement caused by the branches. The top has spread nearly fifty feet, but has recently been shortened in.

The nursery interest of Kent county received a severe shock from the hard

winters in the first half of the past decade, but is recuperating again. As nearly as can be estimated, the present acreage is as follows:—

J. D. Husted, Lowell.....	15 acres.
N. P. Husted, Lowell.....	12 acres.
Munson & Knapp, Grand Rapids.....	30 acres.
Thibos, Lewis & Co., Cascade.....	15 acres.
William Watson, Cascade.....	5 acres.

Since 1870 the heights of ground in Kent county, especially in Gaines, Paris, Grand Rapids, Alpine and Sparta, have been planted with peaches, and the success has been all that could be asked. As yet there has not been an authenticated case of the yellows.

In 1848 a township agricultural society was organized in the township of Walker, but in 1849 its scope and title were changed and it became the Grand River Valley Agricultural Society. Again in 1851 its scope and title underwent a change, and it became the Kent County Agricultural and Horticultural Society. The horticultural suffix to its title seems to have gone into disuse since about 1854 or '5, its name subsequently, as given in its annual reports, being simply Kent County Agricultural Society.

The State Pomological Society, from its organization at Grand Rapids in 1871, took charge of the horticultural department of the fairs of the county agricultural society, which it conducted very efficiently and successfully. In 1873 it took charge of the horticultural exhibit of the district agricultural and mechanical association, which was during the following year consolidated with the State Agricultural Society.

In 1874 an arrangement was made with the State Agricultural Society which provided that the State Pomological Society should collect the exhibits of fruits, plants, and flowers, prepare the premium lists, conduct the exhibition, draw upon the treasurer of the agricultural society for the premiums awarded, not to exceed \$1,000, and that in consideration of the labor and expense involved, the pomological society should receive the farther sum of \$1,400. This arrangement, with slight occasional modifications, has been continued from year to year to the present time.

In 1870 the town of Grattan was awarded a first premium by the Kent county society for the best township exhibit, in competition with the whole State, the collection having been made on behalf of the town by Messrs. Slayton and Duga.

Early in the year 1874 the Grand River Valley Horticultural Society was organized at Grand Rapids. The precise date of its organization is not given, but it adopted by-laws to govern its proceedings on March 3d, 1874. It holds its meetings monthly. Its shows of fruits and flowers have been held in connection with the annual fairs of the Kent County Agricultural Society.

At the August meeting in 1879 William Rowe, W. N. Cook, W. K. Emmons, and S. M. Pearsall were appointed a committee to collect fruits and make exhibits at the meeting of the American Pomological Society, at Rochester, New York, on the third week in September; also the same week at the State fair at Detroit; also at the fair of the West Michigan Agricultural and Industrial Society at Grand Rapids.

The committee sent fifty-four varieties of apples to Rochester, in charge of Edward Bradfield, of Ada, who also made a fine display of grapes, mostly

from his own vineyards. The bronze Wilder medal was awarded to the society for the collection.

At the State fair the society exhibited a fine collection of fruits for dessert and family use; also a collection for market, together with a general collection of apples, peaches, pears, and grapes; with several single plates of apples, peaches, and grapes, entered in the name of the grower. These entries were fairly successful in winning premiums.

A general collection of fruits was also exhibited at the Grand Rapids fair, including a collection each of apples, pears, peaches, and grapes.

The Agricultural and Mechanical Association of 1871 having been absorbed by the State Agricultural Society, previous to the year 1877, a new organization of a similar character was effected under the title of the West Michigan Agricultural and Industrial Society, with headquarters at Grand Rapids. This association has held fairs annually in September down to the present time.

"At the August meeting of the Grand River Valley Horticultural Society in 1880 S. M. Pearsall, Wm. Rowe, W. N. Cook, W. K. Emmons, and P. W. Johnson were appointed a committee to collect and exhibit fruit at the State fair of this State, the West Michigan Agricultural and Industrial fair, and at other fairs, in the discretion of the committee. Soon after this the secretary received the premium list of the Mississippi Valley Horticultural Society, and laid the matter of making an exhibit at St. Louis before the committee and the executive board. It was decided to make an exhibit there, which determination was carried out. The society exhibited one hundred varieties of apples in one collection, forty varieties in another, and ten varieties as a collection for the market, north of the forty-first parallel; also several single plates of apples and pears; also a collection of twenty-five varieties of peaches, one of ten varieties, and several plates. This show of fruit at St. Louis was in charge of President William Rowe and Mr. Cook, and received marked attention from visitors. Dr. Warder, of Ohio, chairman of the awarding committee, said Michigan fruit was the best grown on exhibition, and the most correctly named.

"At the State fair our society exhibited a general collection of family fruits, consisting of fifty-three sorts of apples, four of peaches, three of grapes, four of pears, and four of crab apples.

"Owing to the extremely warm weather when the fruit was being collected, and the prevalence of mildew in grapes, the exhibit in peaches and grapes was not up to the usual standard of the shows of our society, and, in consequence, the collection was awarded the third premium.

"In division B, a general collection of market fruits, one hundred plates of apples, five of grapes, six of pears, and four of crab apples received the first premium.

"In division C, a special exhibit of apples for general purposes, consisting of sixty-seven varieties, received the first premium. We also received the first premium for the most correctly named collection in this division.

"The society also took premiums on sixteen plates of different varieties of apples.

"At the West Michigan Agricultural and Industrial fair, the secretary entered a collection of fruit, and received the first premium. He also took the first premium on a collection of apples, together with a dozen single plate premiums."

In 1882, at the February meeting, a fine display of fruits and flowers was made in response to offers of small premiums.

On the 27th and 28th of June, at the regular monthly meeting of the society, a very fine display of early fruits, flowers and vegetables was made.

In September Elwood Graham and Benjamin F. Decou, on behalf of the society, made an exhibit of fruits at the State fair at Jackson, of ninety varieties of apples, twenty of peaches, ten of pears, twelve of grapes, four of plums, four of crabs and one of quinces. The first premium of \$50 was awarded to this collection.

Two collections of fruits were also entered at the fair of the West Michigan Agricultural and Industrial Society, to each of which a first premium was awarded.

C. W. Garfield, in his "Brief of Horticulture," says there is no one branch of horticulture that takes precedence in the county, although the peach and small fruit interests are very large. The Baldwin and Northern Spy are the leading market apples. Two evaporating houses and several cider and vinegar factories use the less marketable fruits. The peach crop is not as certain as upon the lake shore, but in 1883 more than twenty-five thousand bushels were marketed from the orchards about Grand Rapids. All the peach orchards are on elevated locations. The marketing is mostly done in bushel baskets. Plantations are rapidly increasing. The profits are large, but skill is requisite to secure them. The yellows has appeared in several orchards, but has not, so far, become a serious injury. Pears and plums are not grown largely for market, but are raised in small quantities on a great many farms for family use.

There are a good many successful vineyardists. The Concord has been the leading market variety, but the Worden and Niagara will be more largely planted in the future. Under skillful management grapes can be grown for three cents per pound and yield a small profit.

Duke and Morello cherries are profitably grown for market, and every farm has a few trees to supply the family.

Small fruits are extensively grown and are a considerable source of profit. They are absorbed by the home market. Strawberries grown here come into market about June 5th, and Turner raspberries appear three weeks later, closely followed by Cuthbert, Mammoth Cluster and Gregg, which last till blackberries appear.

Vegetable gardening, as carried on about Grand Rapids, is not excelled by any other locality in the State. Large areas are devoted to vegetable houses, and from early spring until winter the dealers have a magnificent display of finely grown vegetables. There are also specialists who devote themselves to celery, cauliflower, onions, squashes, or some other single vegetable, and derive large profits therefrom.

J. D. Husted, of Lowell, says: Growing peaches, apples and small fruits for market is, to some extent, made a specialty in Lowell and adjoining towns. Not more than one-tenth of the land adapted to growing these fruits is yet in use for such purpose.

Lowell village has two evaporating establishments, and both are running to their full capacity, besides many farmers use small sized dryers, and with jelly-pans and cider mills, the best part of the culled fruit is utilized; farm stock consume the refuse. The number of barrels of apples shipped from Lowell this season (1884) exceeds twenty thousand, and a large number of

barrels, reckoned by thousands, were also shipped from the neighboring villages of Ada and Saranac.

One peach orchard, planted by Matthew Hart, in 1880, containing one thousand trees, has yielded a net income of from \$400 to \$1,000 annually, for a number of years, and has seldom failed to bear a good crop of fruit. This orchard is still standing and promises a good yield of fruit next season. The peach orchard of the writer, including about twenty-five acres, produced, in 1883, a net return of \$2,450.

At a moderate estimate there are ten thousand acres of land within ten miles of Lowell village well adapted to the growing of peaches. About twelve hundred acres are now planted.

In the autumn of 1883 the Grand River Valley Horticultural Society made an attractive exhibit at the State fair, and also at that of the West Michigan Society; besides which, its members contributed freely to the State display of fruits at the New Orleans Exposition, held during the winter of 1882 and 1883.

In June, 1885, the society held a very interesting and profitable meeting at the residence of P. W. Johnson, three miles northwest of Grand Rapids, in the season of strawberries, and another in raspberry time at the residence of C. W. Garfield.

A special meeting of the society was held on August 29th to perfect arrangements for the meeting of the American Pomological Society, to occur at Grand Rapids, September 9th to 11th. The arrangements for this meeting were very complete and satisfactory to both residents and visitors, who seem to have gained a highly favorable impression respecting the city, the people and the State.

On November 30th to December 2d, 1886, the annual meeting of the State Horticultural Society was again held at Grand Rapids, upon the invitation of the Grand River Valley Horticultural Society. The arrangements for the meeting were very complete and satisfactory, and the fruits, flowers and plants unusually varied and the quality superior. The flower and plant exhibit was unusually fine, including a large and superior display of chrysanthemums in bloom, together with specimens of sub-tropical vegetation, as well as fruits, from California.

The following awards were made to citizens of Kent county by the orchard committees of the State Pomological Society:—

IN 1871.

To Noah P. Husted, Lowell, first premium, for plum orchard.

To David Robertson, Grand Rapids, first premium, for Delaware vineyard.

To George S. Linderman, Grand Rapids, first premium, for a half-acre plat of raspberries.

To George S. Linderman, Grand Rapids, first premium, for a half-acre plat of blackberries.

To Mrs. E. T. Nelson, Grand Rapids, first premium, for a private conservatory.

To John Suttle, Grand Rapids, first premium, for a general greenhouse.

IN 1872.

To S. B. Smith, Grand Rapids, first premium, for an apple orchard.

To E. U. Knapp, Grand Rapids, second premium, for a peach orchard for profit.

To Noah P. Husted, Lowell, first premium, for a plum orchard.

To H. W. Slocum, Grand Rapids, first premium, for a collection of hardy grapes.

To C. J. Dietrich, Grand Rapids, second premium, for a half-acre of raspberries.

To Mrs. R. Morris, Grand Rapids, first premium, for an ornamental city lot.

To John Suttle, Grand Rapids, first premium, for a commercial plant house.

To Noah P. Husted, Lowell, first premium, for a general nursery.

IN 1873.

To L. P. Curtis, South Lowell, third premium, for an apple orchard for profit.

To Fred. Yeiter, South Lowell, fourth premium, for an apple orchard for profit.

To J. M. Dean, Grand Rapids, first premium, for peach orchard for profit.

To J. M. Dean, Grand Rapids, second premium, for a vineyard for table use.

To John Suttle, Grand Rapids, first premium, for a commercial plant house.

To T. I. Renwick, Grand Rapids, second premium, for a commercial plant house.

To Noah P. Husted, Lowell, second premium, for a general nursery.

The following persons contributed from this county to the Centennial exhibit of the State Pomological Society at Philadelphia, in September and October, 1876, viz.: Edward Bradfield, Ada, 36 varieties of grapes; William Rowe, Walker, also apples; H. Downus, Ada, samples of fruits; the Grand River Valley Horticultural Society, Grand Rapids, a general collection of fruit.

The death of Hon. Henry Seymour, treasurer of the State Pomological Society for 1874 and 1875, and an honored citizen of Grand Rapids for many years, occurred at that city during the year 1877.

John Suttle, one of the oldest and most esteemed members of the State Pomological Society, and a prominent florist of the city of Grand Rapids, died at that city on September 13th, 1877.

Kent county, according to the census of 1884, contains of apple orchards, 10,922 acres, 344,927 bearing trees, yielding in 1883, 161,509 bushels of fruit.

Peach orchards, 3,362 acres, 161,065 bearing trees, yielding in 1883, 41,592 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$164,658.00.

Vineyards, 106 acres: grapes sold in 1889, 17,682 pounds.

wine made in 1883, 395 gallons.

Nurseries, 79 acres, products sold in 1883, \$8,060.00.

Market garden products sold in 1883, \$39,797.00.

OTTAWA COUNTY.

This county was set off by an act of the Legislative Council of the Territory, approved March 2d, 1831. Its limits, as then defined, included a portion of the present county of Muskegon. It was organized in pursuance of an act of the State Legislature, approved December 29th, 1837.

The name is that of a tribe of Indians who once occupied a portion of the State. It signifies traders.

The name of the county seat was Ottawa, but was changed to Grand Haven March 20th, 1863.

Rix Robinson, who, as an Indian trader, occupied several points in the Grand river valley in a very early day, is reputed to have located a station in the present county of Ottawa as early as 1825, but the actual permanent settlement of the county may be said to have commenced with the arrival of Rev. William M. Ferry and his family at the mouth of Grand river and their settlement there on November 2d, 1834.

In 1833 Rix Robinson pre-empted a quarter section of land, including the river front, at Grand Haven, and, in 1834, Zenas G. Winsor located here as the agent of Rix Robinson. By some he is alleged to have been the first English speaking resident here.

Grand Haven had been platted in 1834, or soon thereafter—the plat being the property of Rix Robinson and Rev. William M. Ferry.

In 1834 or '5 Lemuel Jennison and Lorenz French became settlers in Georgetown; also Judge William Hathaway, who first located in Norton, near Spoonville. T. B. Woodberry settled at Lamont in 1835. Allen Stoddard, Ira and J. H. Maxfield, Henry Steele, Mr. Hedges and others became settlers prior to 1838. They planted fruit trees almost immediately. Of those planted by Henry Steele about thirty trees remain vigorous and well loaded with natural fruit.

Thomas Wilde, of Coopersville, from whom several of the foregoing facts are received, relates the following in connection with early fruit planting:—

“Mrs. Stoddard, wife of Allen Stoddard, brought peach pits with her from New York in 1836. Cleared land being very precious at that time, Mr. Stoddard refused to allow her to plant them, but she urged him by saying they might prove a profitable investment. He at last permitted her to plant them about the stumps. They grew rapidly, reaching the height of six feet the first season, and bearing a heavy crop of fruit the third year, which was taken by Mr. Stoddard in a row-boat to Grand Rapids. These were the first peaches ever offered for sale there. He was so pleased with the result that he invested the returns for his wife’s special benefit.”

From 1836 to 1855 settlements were frequent, but mainly in the vicinity of Grand river; soon thereafter they began to spread into the interior, and orchard planting kept pace with the increase of population. Orchard planting for commercial purposes very soon commenced. The Lawtons, Lillies, Luthers, Stiles’, Weatherwaxes, Laubachs, Pennoyer, Harris, Craig, Phuster, Miller, Loring, Roberts, Alford, Chubb, Hayes, Hudson, and many others planted extensive orchards.

The pioneers of the Holland colony reached that place on February 12th, 1847, and these were followed by a second party, which arrived on the 17th of the following May, and yet others during the next year.

The following particulars are supplied mainly by Walter Phillips, of Grand Haven:—

Henry Griffin, of Grand Haven, is entitled to the honor of having planted the first fruit trees in Ottawa county. In 1838 he planted fruit trees of various kinds on his grounds at Grand Haven. These still live and yearly bear abundant crops of fruit. During the same year Mr. Griffin and Mr. Hopkins planted orchards at Eastmanville. One year later Mr. Burch and Mr. Stoddard planted orchards in the town of Talmadge. Three years later Ira Maxfield, also Erie and Daniel Angell planted orchards near where Lamont now stands.

In the year 1849 William Hathaway and William Thompson planted orchards in the town of Crockery. In the year 1854 William M. Ferry planted an orchard at Grand Haven and Colonel Ferry planted one at Ferrysburgh. One was also planted at Grand Haven in 1859 by Mr. Bolt.

In 1868 Townshend E. Gidley planted extensive peach orchards, together with other fruits on peach plains, a short distance from Grand Haven. Two years later A. O. Ewing set a peach orchard and vineyard, also other varieties of fruits on the farm now owned and occupied by Walter Phillips, near Grand Haven.

Reverting to the southern portion of the county; in the year 1854 the first orchards were planted in the vicinity of Holland by the following persons: A. C. Van Raalte, D. D., Bernardus Grostanhein, John Visscher, A. D. Weerd, and George Harrington.

The same year orchards were planted at Zeeland by C. De Putter, C. De Pree and J. G. Van Mees. In 1870 large peach orchards were planted at Holland by Delos Dutton, John Visscher, and Mrs. J. Heklines. Peaches were planted extensively in the vicinity of Holland in 1875.

From 1864 to 1874 orchards of the various kinds of fruits were quite extensively planted throughout the county, till, by gradual steps, fruit culture has come to be recognized as one of the leading interests of the region.

The exportation of fruit may be said to have commenced from 1871 to '73. In the year 1872 fruit was exported as follows:—

Apples.....	2,250 barrels.
Peaches.....	8,432 baskets.
Grapes.....	6,443 baskets.
Berries.....	6,820 crates.

From that date to the present the increase of shipments has been very marked.

During the year 1885, as shown from the best accessible records, the amount of fruit exported from this county is as follows:—

	Value.
Apples, 9,000 barrels.....	\$13,500.
Peaches, 21,300 baskets.....	9,295.
Grapes, 20,140 baskets.....	6,042.
Berries, 27,282 crates.....	38,194.
Total value.....	\$67,031.

Peaches this year were almost a failure in the county, the crop of the previous year having been very much larger. Holland alone during that year shipped 25,000 baskets.

The foregoing is the statement of fruit shipped. If we assume the value of that consumed at home to be one-third as great, or \$22,344, the total fruit product of the county will be 89,375—truly a very important item among the wealth-bringing products of the county; and when we consider the amount of lands in the county adapted to such purpose, we may be able to attain some comprehension of what are our future possibilities.

The soils of the county are well adapted to the culture of fruits; with the modifying influences of Lake Michigan our climate is good, and at Grand Haven and Holland our shipping facilities are all that can reasonably be desired.

Mr. Frank Hall, president of the Spring Lake Horticultural Society, states that as early as 1858 George Lovell planted a large peach orchard in the county for commercial purposes.

He farther states that apples, grapes and small fruits of all kinds do well, but that peaches have failed from excessive cold in winter.

Early in the eighth decade the lands about Spring Lake were eagerly sought for, to be cleared and devoted to peach growing, and a large number of very promising peach orchards were to be seen upon the shores of this beautiful, land-locked sheet of water; but a succession of severe winters literally swept them out of existence, and no effort seems to have been made to renew them.

A. A. Crozier states that apple orchards were first planted in the township of Jamestown about 1850, that of William Arnold being among the first. There are several orchards in the township, in good condition, planted soon after that time. Joel Smith planted an orchard in 1855, and also supplied trees from a small nursery for several others in the vicinity.

In 1856 O. R. L. Crozier planted an apple orchard in the adjoining township of Georgetown, on low ground, which did not do well. In 1865 he planted another in a better location, in Jamestown, consisting of fifty apples and fifty dwarf pears. The apples are yet in good condition; the pears have died of blight.

The last two plantations were from the nursery of H. E. Hudson, of Hudsonville, which was started at an early day and continued for a considerable time.

Kneeland & Ganzhorn commenced a nursery at or near Spring Lake in 1870. Two or three others were also started about this time in that region. They were all discontinued from 1873 to '75, on account of hard times and the general depression of business. The only one at present advertising fruit trees for sale is that of Frank B. Wilde, in the township of Wright.

Dr. Eastman, who settled at Eastmanville in 1843, planted about six acres of fruit, and also a quantity of shade trees, mostly hard maples, which are now from fifteen to eighteen inches in diameter. One of these was a native black mulberry, a somewhat rare tree in Michigan.

In the forests near the old Indian camps, apple and pear trees have been found, which are supposed to have been planted by the Indians. A pear tree just budding into blossom was cut down by an ignorant workman on the farm of Thomas Wilde about 1855. It measured about twenty-two inches in diameter, and it was seventy feet to the first branch.

E. F. Lillie, while clearing away for a mill in the town of Polkton, in the fall of 1884, cut down an apple tree as tall as any of the forest trees, bearing apples similar to the Greening.

H. E. Hudson, of Hudsonville, in the township of Georgetown, has a grove of fine chestnuts, planted about thirty years ago.

Fruit plantations have been generally successful. Mr. Chubb, of Lisbon, packed one thousand barrels of apples from his orchard last year. He has also five acres of peach trees that never fail of a crop, even after the hardest winters.

The cash received for apples in the townships of Wright, Talmadge and Chester for the year 1885 was about \$40,000. Most of the early planted trees were seedlings, but they have since generally been grafted with improved varieties.

The Ottawa County Agricultural Society was organized at Eastmanville on February 20th, 1856.

In 1868 Jacob Ganzhorn, secretary of the Western Michigan Lake Shore Horticultural Association (a society then but recently organized) reports: "An Isabella grape-vine four years old, growing in the village of Spring Lake, bore in 1868 one hundred pounds of fruit. A Concord vine of the same age though in another garden, bore forty-two pounds, and a Clinton along side of it, one hundred pounds. A four-year-old Catawba, in the same garden, trained against a building, and covering a space about sixteen feet high and twenty-four feet wide, bore one hundred pounds."

In giving the statistics of fruit culture in the immediate vicinity of Spring Lake it is stated that not more than five per cent of what is planted bore this season, yet the product amounted to \$37,105.80.

"All kinds of fruits mentioned in these statistics (as far as tested) succeed exceedingly well in this section, and all bore full crops this season, except the apple, which is estimated to have produced one-third of an average crop."

Catalogue of tested fruits recommended by the Western Michigan Lake Shore Association:—

Apples—Summer: Red Astrachan, Early Harvest, Keswick Codlin, Primate, Porter. Fall: Maiden's Blush, Rambo, Fall Pippin, Autumn Strawberry. Winter: Baldwin, Rhode Island Greening, Wagener, Esopus Spitzenburg, Golden Russet, Fameuse, Yellow Bellflower, Red Canada, Monmouth Pippin, Lady apple, Talman Sweeting, Roxbury Russet. As promising well but not sufficiently tested: Tompkins King, Winesap, Cooper's Market, Hubbardston, Dominie, Swaar, Green Sweet.

Pears—Standard: Bartlett, Angouleme, Louise Bonne, of Jersey. Dwarf: Angouleme, Louise Bonne of Jersey, White Doyenne, Glout Moreceau, Vicar, Seckel, Buffum, Urbaniste.

Cherries—Mazzards: Black Tartarian, Knight's Early Black, Bigarreau, Governor Wood. Dukes and Morellos: Early Richmond, May Duke, Belle Magnifique.

Peaches—Early Crawford, Early Barnard, Hale's, Smock (free), Late Crawford, Morris' White, Jacques.

Quinces—Orange.

Crab apples—Red and Yellow Siberian, Hyslop.

Grapes—Concord, Delaware.

Currants—Red Dutch. As promising, but not yet tested: Cherry, Versailles, White Grape.

Black Currants—Black Naples.

Gooseberries—Houghton.

Raspberries—Doolittle's Black-cap, Philadelphia.

Strawberries—Wilson (best for market), Agriculturist, French.

The report of the county agricultural society for 1868 says the apple crop is small, the peach crop very large.

The Western Michigan Lake Shore Horticultural Association, at its second annual meeting, had delegates in attendance from various locations along the east shore of Lake Michigan. During a two days' session it received the report of a committee appointed to prepare or revise the society's list of fruits. This report, which is signed by Jacob Ganzhorn, S. B. Peck, Townsend E. Gidley, and Thomas Wilde, adds the following to the lists of the previous year, viz.:—Apples: Summer—Benoni, Oldenburg, Sweet Bough. Autumn—Gravenstein, Golden Sweet, Hawley. Winter—Jonathan, Lady's Sweet, Bagley Sweet (?), Peck's Pleasant, Westfield.

Pears—Standard, Bloodgood, Flemish Beauty, Sheldon, Howell, Lawrence, Clapp's Favorite.

Plums—Washington, Jefferson, Lombard, Columbia, McLaughlin, Imperial Gage, Green Gage.

Quinces—Rea.

Mulberries—Downing.

Grapes—Isabella, Clinton. Varieties not fully tested but promising—Crevelling, Ives, Salem, Martha, Eumelan, Wilder, Rogers No. 5, Lindley, Agawam, Merrimac, Rogers No. 33.

Gooseberries—Downing.

Raspberries—Clark, Miami Black-cap.

Blackberries—Lawton, Kittatinny, Wilson.

Strawberries—Triomphe de Gand.

In January, 1870, an Ottawa County Farmers' Club was organized. During its discussions Henry S. Clubb remarked: "A gentleman residing at Lamont, well situated for knowing the facts, told me that the apple crop alone saved the credit of the farmers last fall. The price of wheat, being low, did not meet the expense of raising, and had it not been for the apples the farmers would have been unable to pay their grocery and dry goods bills."

On September 29th and 30th, 1870, the sixth exhibition of the Western Michigan Agricultural and Horticultural Society was held at Spring Lake. This being the society's sixth exhibition, its organization is supposed to have occurred in 1875.

At this exhibition over one hundred entries were made, consisting of grapes, apples, pears, canned peaches, strawberries, and other fruits; also a good display of vegetables, tomatoes, potatoes, onions, egg-plants, squashes, pumpkins, sweet corn, seed corn, pop-corn, etc.

House plants, consisting of salvias, coleus, fuchsias, geraniums (single and double) and numerous other choice plants, the foliage plants taking the lead for novelty. A Russian sunflower was exhibited, measuring sixteen inches in diameter, four feet in circumference, thirteen feet height of stem, which was three inches in diameter. This was grown upon the sandy soil of Grand Haven.

In 1871 the fruit and floral departments of the annual county fair were excellent. The whole county is adapted to the growing of fruits, either large or small, and the lake shore region is especially adapted to peaches and grapes. At Holland fruit is largely grown for export. The region bordering on Spring Lake is noted for the production of peaches and grapes. Numerous other localities have also acquired a similar reputation.

From a careful and concise statement of the fruit product of the vicinity of Spring Lake for the year 1871, the following is condensed: There were one hundred and forty tons of grapes and eighteen thousand baskets of

peaches shipped during the fall. The Spring Lake Horticultural Society received the silver medal and diploma of the Wisconsin State Agricultural Society for an exhibition of peaches at the State fair in Milwaukee in September.

George H. Lovell has 4,500 peach trees on 25 acres; yield, 7,000 baskets; receipts, \$3,500; also one-half acre of grapes, yield 7,000 pounds; receipts, \$200; apples, 20 bushels.

Charles E. Soule from 299 peach trees, yield 2,241 baskets; net proceeds, \$982. Grapes yielded \$251.95.

J. B. Soule from 2,000 three-year peach trees shipped 1,000 baskets. From 360 Concord and Delaware vines he shipped 4,500 lbs.; from Doolittle raspberries 40 bushels. Total net proceeds \$820.00. E. A. Treadway has 15 acres reclaimed from forest and planted within three years. One hundred bearing peach trees produced 60 baskets, five hundred young grape-vines yielded 3,000 lbs. He also produced 10 bushels of black-cap and 10 bushels of red raspberries. Total net proceeds \$170.00. Martin Walsh, from 111 peach trees shipped 1,000 baskets; from 1,426 grapes he shipped 280,550 lbs.; also 10 bushels crab apples, 10 bushels raspberries and 20 bushels blackberries. Total net proceeds \$1,550.50.

Charles Allen produced 7,900 lbs. grapes, 25 bushels strawberries, and 28 bushels raspberries. Net proceeds \$896.00.

H. G. Smith shipped 789 baskets of peaches, 200 boxes grapes and 110 bushels apples. Net proceeds \$497.67.

T. D. Dennison from 100 young peach trees shipped 600 baskets, from 200 grape-vines 2,000 lbs. Net proceeds \$440.00.

John K. Kneeland & Co., proprietors of Spring Lake nursery, own 161 acres of land, one-half in orchard; 1,200 peach trees beginning to bear, yielded 1,000 baskets; 250 apple trees now bearing; 4½ acres of new vineyard yielded 2,500 lbs., also two acres in small fruits.

L. D. Bartholomew has 7 acres in peaches. From one acre shipped 125 baskets; from 500 vines shipped 2,000 lbs. grapes; also 200 quarts of raspberries.

Hiram Beckwith has 150 young apple trees which bore 60 bushels, 10 bushels of pears from two trees. He also has 600 peach trees, 200 quinces, three years old, one acre of vineyard, half an acre of strawberries and a quarter acre of raspberries.

W. G. Sinclair sold 200 baskets peaches, 40 bushels apples, 20 bushels raspberries and 2,000 lbs. of grapes.

Most of the foregoing orchards and vineyards are within the corporate limits of Spring Lake.

In December, 1872, D. R. Waters, of Spring Lake, states that the peach crop of that year amounted to only 16,000 baskets, and that there were planted, closely about the village 65,000 peach trees, including Early Crawford, Late Crawford, Hale, Barnard, Honest John (yellow), Morris' White, Oldmixon (free), Jacques, Early York (serrate), Large Early York, Red Cheek, Melacoton, Coolidge, Stump-the-World, Hill's Chili, Royal George, Mountain Rose, George the Fourth, Late Admirable Heath (cling), etc. He thinks that the majority of peach growers on average sites, in an orchard of 1,000 trees, would plant about as follows: 100 Hale, 100 Early Crawford, 275 Barnard, 150 Oldmixon (free), 100 Late Crawford, 275 Hill's Chili. He also states that the year's grape crop amounted to 175,000 lbs. grown on 47,000

vines. Reliance was also had upon an Alden fruit preservatory established and in operation at Spring Lake as a remedy against unusual depression of market prices, or a surplus of production.

The winter of 1872 and '73 gave a rude shock to the ambitious aspirations of the peach growers, especially of this vicinity. Mr. Lyman Hall, of Spring Lake, writes: "Our thermometers indicated—5° on the morning of January 28th, but from 9 o'clock on the evening of the 27th to one o'clock on the morning of the 28th it indicated—19°; February 22d, —5°; and 23d, —10°. The first impression was that fruit trees, including the peach, were nearly, if not wholly uninjured—an anticipation that was doomed to disappointment at the opening of spring. This conclusion is strongly confirmed by the report of the examinations of the orchard committee in the summer and fall of 1874, who remark respecting the orchards about Spring Lake: 'The severe winter of 1872 and '73 left its trace in nearly all of them.'"

Hon. Grosvenor Reed, of Robinson, has a farm on the border of what is known as the "big marsh," a level wet prairie, nine miles east of Lake Michigan, and about seven miles long and three wide. It is partially drained by the ditches along the Chicago and Michigan Lake Shore Railroad and those of the road bed of the unfinished Michigan and Ohio Railroad.

About 1872 Mr. Reed prepared a patch of this ground, 50 by 100 feet, by draining and cultivating to destroy the grass and weeds, and the next year plowed it with a subsoil plow, throwing a portion of the sand subsoil to the surface. He then selected the best wild cranberry plants and planted the prepared plat with them. The plants grew well, producing twenty-five bushels of excellent cranberries, at the rate of 217½ bushels per acre. The following is from the notes of Henry S. Clubb, formerly of Grand Haven, from whom also the foregoing facts are derived:—

Mr. Reed allows the water to stand on his cranberry patch during the winter to protect the plants from frost, but does not flood it in the summer, as it might overflow lands required for other purposes.

Since the first crop fire has overrun the marsh, sweeping the cranberries off that year, but this year (1877) the vines show a perfect sheet of white blossoms, showing that the roots of the plants had not been killed.

Mr. Reed has planted half an acre with cranberries in the same manner, and the plants, although young, are also white with blossoms, showing promise of a good crop, say in all forty bushels.

He selects plants in the fall from the best natural patches, ties them in bundles and puts them into water, where they remain fresh all winter, and plants them in spring.

There are thousands of acres of this marsh adapted to the treatment described, and it is understood that capitalists have recently visited the locality and there is a prospect that the big marsh, instead of remaining a source of malaria, may be made profitable as a producer of fruit and farm crops.

The Holland Colony Farmers and Fruitgrowers' Association which made its first annual report to the State Horticultural Society in the autumn of 1880, had been in existence two or three years, and may be supposed to have already contributed to develop the already large fruit-growing interest about the city of Holland. It has a list of twenty-five full members.

The Spring Lake Horticultural Society was an organized and active body for several years prior to 1882, on March 28th of which year it became auxiliary to the State Horticultural Society. In its annual report for that year it

was stated that "The fruit crop here has been a fair one with the exception of apples, which were a small crop. The rose bug did considerable damage during the fore part of the season, and the thrips injured the grape crop to some extent. The present prospect for a crop next season is good."

A society known as the Grand Haven Fruit Growers' Association has existed for several years at Grand Haven, which reports annually as an auxiliary to the State Horticultural Society. Its report for the year 1883 states: "That the main incentive to the formation of this association was the fact that by coöperation we could obtain our fruit stock and packages at reduced rates, which has been very satisfactorily demonstrated. The utmost good feeling has prevailed on the part of the members, and, on the whole, it may be said that socially, morally and financially we are in a healthy condition."

In a "Brief of Horticulture," Secretary C. E. Russell, of the Grand Haven society, says: "It will be noticed by referring to our map that this county lies against the great lake at its widest part. Grand river flows across it, and at its mouth lies Grand Haven and Spring Lake. The last mentioned town is not directly at the mouth of the river, but at the mouth of a lake from which it gets its name. This is a beautiful sheet of water, very deep and clear, and fruit farms are located on either side of it, each having its separate dock, at which a little steamer calls several times each day and takes the products to larger steamers at the wharf, whence they are conveyed, in six hours' time, to Chicago or Milwaukee.

"Peaches and small fruits are the specialties of this vicinity, although considerable quantities of vegetables are grown for the western markets. Holland, which lies in the southwest part of the county, is a shipping point for large quantities of peaches."

In the fall of 1884 the Spring Lake society reports that: "Frosts and other causes destroyed many of the grapes, and nearly all the peach crop.

"The society has taken great interest in the cultivation of small fruits and choice grapes. These fruits have been the main subjects of discussion at the meetings. Peaches have had a place, but do not return an annual profit because of the severity of the past two winters."

In 1885 the report of the Spring Lake society states that peach trees came through the past hard winter in better condition than was anticipated, but that growers are turning their attention largely to the growing of small fruits, also that the cut worm and army worm were quite abundant and destroyed a large number of young plants.

The orchard committees of the State Pomological Society awarded premiums to citizens of Ottawa county as follows:—

In 1871: To Hunter Savidge, Spring Lake, first premium for an apple orchard.

To Lyman Hall, Fruitport, first premium for a peach orchard.

To W. B. Mason, Fruitport, first premium for a peach orchard.

To A. L. Soule, Fruitport, first premium for a peach orchard.

To A. L. Soule, Fruitport, first premium for a cherry orchard.

To Thomas Petty, Fruitport, first premium for a vineyard in bearing.

To Thomas Petty, Fruitport, first premium for a Concord vineyard.

In 1872: To Charles Alford, Lamont, second premium for an apple orchard.

To Charles Alford, Lamont, second premium for a collection of varieties of apple trees.

To E. A. Treadway, Spring Lake, second premium for a Concord vineyard.

To C. Allen, Spring Lake, first premium for an acre of strawberries.

In 1873: To J. B. Soule, Fruitport, first premium for an apple orchard for profit.

To J. B. Soule, Fruitport, first premium for a peach orchard for profit.

To J. B. Soule, Fruitport, second premium for a peach orchard for profit.

In 1874: To J. B. Soule, Fruitport, second premium for a peach orchard for profit.

To Thomas Petty, Spring Lake, second premium for a peach orchard for profit.

To J. B. Soule, Spring Lake, first premium for a peach orchard for profit.

In 1875: To D. R. Waters, Spring Lake, first premium for a red or yellow raspberry plat.

Contributions of fruits to the exhibit of the State Pomological Society, at the Centennial Exposition at Philadelphia, in September and October, 1876, were made from this county by the following persons, viz.: Walter Sinclair, Spring Lake, Baldwin apples; Hunter Savidge, Spring Lake, grapes; Thomas Wilde, Berlin, apples.

The citizens of Spring Lake have cemetery grounds in a beautiful grove of preserved native trees.

Macatawa park was commenced in the fall of 1881 by a stock company organized at Holland with a capital of \$25,000. The company purchased two hundred and forty-eight acres of land, mostly on the south side of Black lake. Macatawa is the Indian name of the lake, meaning black water. The park is bounded on the west by Lake Michigan, and on the north by Black lake and the harbor.

Improvements were commenced in the spring of 1882 by building a dock, a hotel, sidewalks, etc. The hotel has been enlarged every year since, and many other improvements have been made. There are now twenty-two cottages, with bath-rooms, etc., and more than a mile of sidewalks. Three of the buildings are double cottages. The light-house and the government life-saving station are also upon these grounds. The latter was built in 1885 and '6. The land is mostly covered with heavy timber, some of the trees being three and four feet in diameter.

The purpose is to keep the timber as nearly as practicable in its present condition, removing only what shall become needful to make room for drives and buildings, so that the people may have at least one piece of original timber to be seen and enjoyed.

Lots are leased for twenty years, and at the end of that time may be released; or the lots may be reclaimed and the improvements paid for. The object in leasing the lots is to be able to control the sale of intoxicating liquors and other objectionable matters, and provision is made for the forfeit of a lease, as the penalty for the sale or the giving away of a glass of liquor, it being the purpose of the management to avoid the connection of the establishment with any kind of immorality.

During the past summer (1886) two steamers, each making four trips per day, have been employed between Holland and the park, a distance of six miles, while four others have acted as ferries and in carrying fishing parties.

The number of visitors the past summer was probably not less than fifty thousand.

The foregoing is communicated by C. A. Dutton, the efficient superintendent.

ent of the park, from whom the fact is learned that the success of this enterprise has begotten another and rival movement for the opening of what is to be known as the West Michigan park, upon the north side of the lake, and embracing ninety acres of land. This movement originated during the autumn of 1885, and is also the undertaking of a stock company, who already have a dock, sidewalks and a fine, large hotel built during the summer of 1886.

According to the census of 1884 Ottawa county has of

Apple orchards, 4,975 acres, 172,610 bearing trees, yielding, in 1883, 60,950 bushels of fruit.

Peach orchards, 984 acres, 84,223 bearing trees, yielding, in 1883, 8,836 bushels of fruit.

The value of orchard products of all kinds, sold or consumed, in 1883, was \$67,960.00.

Vineyards, 158 acres: grapes sold in 1883, 129,367 pounds.
wine made in 1883, 450 gallons.

Nurseries, one acre; products sold in 1883, \$1,153.00.

Market garden products sold in 1883, \$16,429.00.

SANILAC COUNTY.

A county was laid out and named Sanilac by proclamation of Governor Lewis Cass, dated September 10th, 1822, which included the present county, except the southern portion, then included in St. Clair, and considerable additional territory at the west and north.

The county was organized in pursuance of an act of the State Legislature, which took effect from and after the 31st of December, 1849.

The act fixed the county seat at Lexington until 1853. The present county seat is at Sandusky.

A Sanilac County Agricultural Society was organized as early as 1868.

A District Agricultural Society was organized at Deckerville in 1873, probably in the interest of the more northerly portion of the county.

In 1876 the Central District Agricultural Society was organized.

At page 174 of the report of the State Horticultural Society, in a "Brief of Horticulture," C. W. Garfield says: "Since the great fires that ran over the country in 1881 there has been a rapid development of the agriculture of this region, and it has been found that there are peculiar characteristics that commend this country to the fruit grower.

"As yet injurious insects have not seriously troubled the fruit grower, and apples and pears are singularly clean and smooth. Near the lake shore peaches can be grown with success, and the ports along the shore give ample facilities for marketing products. There is no question but this will be a grand country for plums and grapes. Plantations of all sorts of fruits are rapidly starting up along the shore."

The county, according to the census of 1884, had of apple orchards 4,401 acres, 107,899 bearing trees, yielding in 1883, 19,058 bushels of fruit.

Peach orchards, 22 acres, 1,280 bearing trees, yielding in 1883, 494 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$15,128.00.

Vineyards, 7 acres: grapes sold in 1883, 146 pounds.
wine made in 1883, -----

Nurseries, none.

Market garden products sold in 1883, \$517.00.

TUSCOLA COUNTY.

By act of the State Legislature, approved April 1st, 1840, the present county of Tuscola was set off from Sanilac, as originally constituted.

By an act of that body, approved March 2d, 1850, which took effect on the first Monday in January, 1851, the county was organized. The county seat was fixed by the act of organization, at Caro.

The earliest settlement within the limits of the county was made in 1836. Among the earliest settlers were Ebenezer Davis and Edwin Ellis (Pioneer Collections, vol. 7, page 578).

H. C. Hills, of Unionville, says the first apple orchards, of seedlings, were planted about 1855. Many of these have been top-grafted. These have generally succeeded very well, and are yet bearing good crops. The general planting of orchards began about 1861, and they are mainly in good condition at the present time, although the cold winter of 1885 damaged some varieties, notably Baldwin, Rhode Island Greening, Esopus Spitzenburg, Wagener and Tompkins County King. Notwithstanding this, he considers the apple a success in that county.

He further states that for some years peaches did well and the fruit sold, in Bay City, at four and five dollars per basket. Plums are also successful and command similar prices. One plum tree, only three years planted, produced two and three-fourths bushels of fine fruit.

He reports crab apples very successful, and currants, gooseberries, raspberries, strawberries and small fruits generally, eminently so.

He names Red Astrachan, Maiden's Blush, Lowell, Fameuse, Twenty Ounce, Northern Spy and Baldwin (as a top-graft) as generally successful.

The Tuscola County Agricultural Society was organized January 8th, 1866.

In 1868 the secretary, in his annual report to the State Board of Agriculture, says: "We cannot boast of so large a crop of apples as last year, still those raised were of unusual excellence. Although the business of fruit raising is yet in its infancy with us, it has already been demonstrated that Tuscola county can hardly be beaten by any locality of Michigan for the production of apples and many of the smaller fruits, while peaches and pears succeed admirably in some neighborhoods, particularly about Watrousville, and along the shore of Saginaw bay.

"In horticulture there is still a great chance for improvement, particularly in the cultivation of cherries, plums and berries of various kinds. These would be cheap luxuries, in which the poorest might indulge, if he owned but an acre of soil. The hardier kinds of grapes succeed well."

The report for 1869 says: "Fruit of all kinds usually grown in the county was abundant. Apples were excellent in quality and the crop was large. The

orchards being young, there is not a surplus for market, few farmers having more than enough for their own use; but enough has been done to show, beyond dispute, that apples succeed remarkably well, and may be raised anywhere in the county. Peaches were unusually plenty wherever the necessary attention has been paid to the cultivation of the trees. Pears, plums, cherries and other small fruits are cultivated to a considerable extent, and their culture the past year has been rewarded with a fair degree of success."

In 1870 the report states: "Apples were not perhaps as abundant as in some former seasons, still there was a fair crop, both in quantity and quality. Peaches were very scarce, owing probably to the excessive crop of the previous year. Small fruits of most kinds were plenty and of good quality. We notice a very commendable discretion used very generally throughout the county in selection of choice varieties of fruits. Little or no poor fruit is raised, and trees bearing inferior sorts are very properly rejected."

The report of 1871 goes on to say: "As the fact becomes definitely settled that fruit can be successfully raised in the county, there is apparently more interest in its culture. Approved sorts are selected for setting, more care is exercised in pruning, in cultivating the soil, and in the general management of the orchard. A small plat in each garden, set apart for small fruits, would, if properly attended to, yield a large amount of delicious food for those who are disposed to take the necessary trouble. The apple crop was not as large or as perfect in quality as in some former years, owing, no doubt, to the unusual drought prevailing so large a part of the season. The pear crop was a very good one."

Coming down to 1883 we find the following report:—

"Apples were not more than twenty per cent of an average crop. In a few favored localities the peach crop was quite good; in others almost or quite a failure. With the exception of plums the smaller fruits were nearly an average crop."

The quotation from C. W. Garfield's "Brief of Horticulture," in the history of Sanilac, applies equally to Tuscola county.

According to the census of 1884 the county has of

Apple orchards, 5,836 acres, 131,563 bearing trees, yielding, in 1883, 73,783 bushels of fruit.

Peach orchards, 157 acres, 3,886 bearing trees, yielding, in 1883, 2,436 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$45,014.00.

Vineyards, 9 acres: grapes sold in 1883, 3,555 pounds.
wine made in 1883, 213 gallons.

Nurseries, none; products sold in 1883, \$154.00.

Market garden products sold in 1883, \$1,037.00.

SAGINAW COUNTY.

Saginaw county was laid off by proclamation of Governor Lewis Cass, bearing date September 10th, 1822, including portions of what are now Midland, Bay and Genesee counties. Prior to the completion of its organization it was a dependency of Oakland county.

The county was organized in pursuance of an act of the Legislative Council of the Territory which took effect from and after the second Monday of February, 1835

Saginaw is an Indian name derived from Sac-e-nong, or Sac town. The county seat is Saginaw.

Jacob Smith, known among the Indians as Wah-be-Sins, an Indian trader in the Saginaw valley both before and after the war of 1812, was the first white pioneer of this county.

Judge Albert Miller, in his reminiscences of the Saginaw Valley (Pioneer Collections, vol. 7. pages 228 to 304) says: "The first white person that visited this valley (unless it may have been the Jesuits) found several clusters of apple trees growing at different points near the banks of the rivers which yearly produced large crops of fruit. It is sixty years (in 1884) since those trees were first known to the whites and some of them at that time indicated an age of sixty years or more. Their origin was generally conceded to have been from seeds of fruit brought by the Indians from Canada on their returns from their annual trips to receive annuities from the British government.

"One clump of these trees, consisting of four or five in number, was situated at Carrollton, near the bank of the river, another group was situated on the farm now owned by A. B. Paine, a short distance above the crossing of the Jackson, Lansing and Saginaw railroad, others on the Tittabawassee river above the last mentioned point. One of the trees still standing on Paine's farm has a peculiar formation; it has four or five large trunks proceeding from one root, and has always been a prolific bearer. One year, when owned by the late James Frazer, in pioneer days, it bore one hundred and eleven bushels of choice fruit, and each white family then residing in the Saginaw valley was presented with a bag of apples by Mr. Frazer. Some of the old Indian apple trees referred to died many years ago.

"In the course of time Major Mosley became the owner of the Carrollton farm, upon which the apple trees stood, and had a tenant named Ensign, whom he suspected to be inimical to his interests, and in 1838 the highly prized apple trees presented a sickly appearance, showing a rapid decline, which soon proved fatal. Judge Davenport, a neighbor of Moseley's, who was something of a wag in his day, told the Major that Mrs. Ensign had poured hot water on the roots of his apple trees, which caused their destruction, which he (Moseley) verily believed, and he was greatly incensed at the act of vandalism. But it was not hot water that killed the trees, but cold water which flowed over the banks of the Saginaw river, clearly indicating that the last half century has produced a great change in the level of the surface of the great lakes."

The following account of these old Indian trees is contributed to the transactions of the Michigan State Pomological Society for 1880, by Robert Ure, of Saginaw county, through E. F. Guild, of East Saginaw:—

"I do not know that there were any Indian apple trees on Green Point, but clumps and clusters of wild plum trees were found along the Tittabawassee, above its junction with the Saginaw, and almost every fall canoe loads of red and yellow plums could be gathered, and the supply was always more than equal to the demand. The first apple tree to be met with, passing up the river, was near the Briggs house, of which I can say but very little. The first of any importance were on the James Frazer farm; not only be-

cause they were waymarks along the river, and at a convenient place for getting out of the canoe to stretch the limbs and rest a few moments in their shade, but more especially for their being forcible reminders of the civilization that had been left so very far in the rear, and the enormous crops some of them produced. Several of them have been known to produce eighty bushels of apples on each tree in a season.

"The apple trees near the State road bridge were thrifty growing trees, and some of them had beautiful appearing apples, one of them bearing a very rich red apple, of good size, but oh, how sour! The next were on the Span farm, now occupied by the Tittabawassee Boom Co., and were a little ways back from the river. One or two of these bore very good fruit. The next were at Aptewatchwon, or half way to what is now Midland City. There were quite a number of trees at this place, some with very inferior fruit and others very fine and good keepers.

"Since I have been looking up this matter and making inquiries, I have come to believe that the whole history of these trees has been unknown so far as truthfulness is concerned. In the first place, I do not believe that a single tree was bought of a tree peddler or nurseryman; neither do I believe that the seeds from which these trees grew were ever planted by Indians.

"Within the recollection of the old residents, the Saginaw Indians made an annual journey to Malden, Canada, to receive presents from the British government; and these journeys were generally made by way of the Indian trail, accompanied by their ponies and dogs; while the poorer 'Nitchies' went in canoes, following the shore from Saginaw to Detroit. The orchards, both on the Canadian and American side of Detroit river, bore large crops of fruit, and the Indians, who were proverbially hungry, without doubt often filled themselves with the tempting apples. It would not be strange if some were put away among their baggage, and were brought back in their canoes. There being bearing apple trees at that time on the trail as far as Pontiac, a few might possibly have found their way to Saginaw by this route.

"The improvident nature of the Indians will not permit us to give them the credit of carrying apple seeds any distance with the hope that after waiting ten or fifteen years they might have the pleasure of eating the fruit of them. Much sooner would I conclude that the seeds from which these trees grew were transported in the stomachs of those journeying Indians, as they were essentially bipeds of passage.

"My reasons for these conclusions are:

"1st. These apple trees do not indicate that they have been the objects of care;

"2d. The fruit resembles the apples of the old French orchards on the Detroit river in their appearance and quality;

"3d. The Indians who were too indolent to build good shelter to protect themselves and families from the inclement weather, might plant a little corn, when but a few weeks would intervene between the planting and the green corn dance. But nothing that I have ever seen in the prudential motives of the Indians of former days could induce me to believe that the combined forethought of the whole Saginaw band or tribe would ever amount to the setting out of an apple orchard. I conclude, therefore, that the seeds from which these trees grew were carried to their respective locations in the stomachs of the Indians in their migration from place to place, and after being discovered, were, without doubt, in some measure protected by the

squaws, who are the laboring class of the tribe, until their growth was assured.

"The exact date of the first bearing apple tree of these Indian orchards is not known, but it may be presumed that it was sometime previous to 1800, as there are several squaws and Indians whose recollections go back distinctly to the war of 1812, and at that time there were many apple trees which were of full size and bore large crops of fruit every year. This would at least determine their origin several years previous to 1800, and it is not at all unlikely that there were seeds deposited and trees grown from them, as far back as the middle of the eighteenth century. The naturally fertile soil along the river banks in Saginaw county seems, by these facts, to be the natural home of all our native fruits, where they will grow in luxuriance and abundance, and repay the grower ten, fifty and one hundred fold for his labor."

Mr. Guild also says that in 1822 the United States government established a military post at Saginaw, with two companies of troops, to protect the fur trade. They, with other government employés, cleared and tilled several acres of land.

In 1832 several persons settled along the Tittabawassee river, a few miles above its mouth. Among these were Andrew Ure, J. Brown, I. Thompson, — McCarty, John McGregor, H. and C. McLane, and Stephen Benson. They found the Indian orchards (already described), and there were also Indian orchards of similar age on the Flint river, in the town of Taymouth, in the southern part of this county, together with more or less land in each place cleared and cultivated by the aborigines.

Trees were brought into the valley as early as 1833. From that time till 1840 many persons settled along the river and planted orchards. Most of the trees came from a nursery (the Hastings nursery?) near Pontiac, Oakland county. These orchards generally are yet in good condition.

In December, 1846, Curtis Emerson came to Saginaw City, and on July 4th, 1847, he crossed the river and became the first resident of East Saginaw, which he named Buena Vista, in honor of Taylor's then recent victory over Santa Anna. (Judge Albert Miller, in *Pio. Col.*, vol. 7, page 279.)

Judge Miller states (at pages 256-7, vol. 7, *Pio. Col.*): "The earliest orchards in the valley were grown from seeds brought from the State of New York. Asa and Abram Whitney each had an orchard, and I think theirs were the first planted by the pioneers of the valley. They were on the banks of the Tittabawassee river.

"At an early date in the settlement of the valley Messrs. Little and Ladd brought apple seeds from Livingston county, New York." A few trees were brought on pack horses from Oakland county, Michigan, and planted in the gardens of Gardner D. and Ephraim S. Williams. "These," says Judge Miller, "I think were the first bearing trees grown by the settlers of the Saginaw valley. Plums have been grown in great abundance, by grafting cultivated fruit on the native wild stock.

"There was no difficulty in raising peaches in the valley, in great abundance, till 1856. That winter was so severe that nearly all the peach trees were killed. I was living at Portsmouth at that time, and had two or three young trees that were preserved by being covered by a snow drift, that bore fruit for many successive years after that; but, as a general thing, peaches have not been so sure a crop since 1856 as before that date."

About 1856 the late Joseph Halstead "was at tea at his friend's house when

the table was bountifully supplied with delicious strawberries; and a short time afterwards he saw the table supplied with the same kind of choice fruit, when he remarked to the lady that they must have a large number of plants to gather from. 'Yes,' she replied, 'we have a dozen.' He thought if such supplies of fruit could be produced from a dozen plants, it might be profitable to raise them in larger quantities; so he became the agent for the eastern grower of the plants, and introduced them into many gardens at Saginaw."

The Saginaw County Agricultural Society was organized in 1868.

In 1874 the orchard committee of the State Pomological Society visited and examined the garden of E. F. Guild, of East Saginaw, upon which the report was highly complimentary, and to which a first premium was awarded.

An examination was at the same time made of the vineyard of John C. Zeigler, upon a city lot at Saginaw City, to which a first premium was also awarded.

The joint annual fair of the State Agricultural and Pomological Societies was held at East Saginaw on September 14 to 19th, 1874, and again on the same grounds on September 13th to 17th, 1875.

These successive exhibitions, whatever the financial results may have been, were very full and satisfactory, so far as the horticultural displays were concerned. The exhibits were large and excellent, and that of vegetables was large and of superior quality.

The following awards of the orchard committee of the State Pomological Society for 1875 were made to residents of Saginaw county:—

To E. F. Guild, of East Saginaw, first premium, for a small fruit garden.

To Mrs. Amos Parkes, of East Saginaw, first premium for a private plant house.

To J. Dyckmann, of East Saginaw, first premium for a commercial plant house.

To Elias H. Wurtz, of East Saginaw, first premium for a farm plat devoted to market gardening.

To Mrs. L. P. Mason and Mrs. D. F. Rose, of East Saginaw, first premiums for flower gardens.

In September and October, 1876, E. F. Guild, of East Saginaw, contributed a choice collection of grapes to the exhibit of the State Pomological Society, made at the Centennial World's Exposition, at Philadelphia.

E. F. Guild, of East Saginaw (*Mich. Pom. Trans.*, p. 174-5.) says: "The Saginaws furnish an excellent market for all horticultural products, and they import very largely to supply the home demand. There is an excellent field here for skilled fruit growers. Apples, plums, grapes, pears, quinces and small fruits all do admirably. The market garden interest is best developed, and illustrates what may be done here. The finest vegetables in the State are grown here, as witness the premiums at State fairs whenever Saginaw has competed. Lands are not exorbitant in price, but need to be well selected, and drainage is an important item, as most of the soil is a heavy clay loam."

According to the census of 1884 Saginaw county had of apple orchards, 4,959 acres, 99,884 bearing trees, yielding in 1883, 53,240 bushels of fruit.

Peach orchards, 10 acres, 151 bearing trees, yielding in 1883, 105 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$37,738.00.

Vineyards, 47 acres: grapes sold in 1883, 14,789 pounds.
 wine made in 1883, 3,294 gallons.
 Nurseries, one acre; products sold in 1883, \$3,500.00.
 Market garden products sold in 1883, \$20,478.00.

GRATIOT COUNTY.

This county was set off by act of the Territorial Legislature, approved March 2d, 1831.

It was organized under the provisions of an act of the State Legislature, approved February 3d, 1855.

The county was named from Fort Gratiot, which formerly stood at the foot of Lake Huron.

The county seat is at Ithaca.

The Gratiot County Agricultural Society was organized in 1866.

In 1869 few apple orchards were yet in bearing, although farmers were planting them extensively. It was claimed to be a good peach region.

At the winter meeting of the State Pomological Society, held at Lansing, on February 18th to 20th, 1879, W. O. Fritz, of Pompeii, remarked: "The prospect for a large crop of fruit, especially apples, in this section, is quite flattering at this time; this statement being modified by the neglect which peach trees receive. A great many trees have been killed, others ruined by the borer. Since the cold weather four or five years ago, very few peach trees have been planted. Cherry and plum trees are not so plentiful as in other sections. Our county is comparatively new, and the fruit interest has been sadly neglected (I might possibly except apples). But as regards apples we will not take a back seat until we have a fair trial at least. One of our citizens has, on one occasion at least, sold Northern Spy apples, in Ithaca, on the 4th of July.

Some of the grape-vines seem to be diseased. I think, from a passing observation, that the phylloxera is in our midst. I will examine more closely. This winter has been steady; the coldest 8° or 10° below zero."

According to the census of 1884 this county had, of

Apple orchards, 5,208 acres, 105,071 bearing trees, yielding in 1883, 52,120 bushels of fruit.

Peach orchards, 24 acres, 1,281 bearing trees, yielding in 1883, 39 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$29,551.00.

Vineyards, 16 acres: grapes sold in 1883, 480 pounds.
 wine made in 1883, 22 gallons.

Nurseries, 3 acres; products sold in 1883, \$235.00.

Market garden products sold in 1883, \$1,215.00.

MONTCALM COUNTY.

This county was set off by an act of the Territorial Legislature, approved March 2d, 1831, and was organized in pursuance of an act of the State Legislature, approved March 20th, 1850.

The section providing for the location of the county seat was amended in 1859.

The county seat is located at Stanton.

In 1839 and 1840 Luther Lincoln and others built the first saw-mill in Montcalm county.

In 1841 Mr. Lincoln and his son, thirteen years of age, were residents of Greenville, they being the sole inhabitants of the county.

In the History of Michigan Horticulture, in 1880, Prof. James Satterlee, speaking of this county, says: "The southern tier of townships, which join Ionia county on the north—Eureka, Fairplains, Bloomer and Bushnell—were first settled and show the greatest development in fruit culture of any townships in the county. The original timber of these townships was mostly oak, in some places very heavy. It has taken much time to get rid of the stumps and to get good orchards started. The timber of Eureka, being less heavy, was the first cleared, and this township now produces more fruit than any other. There is much high, dry and sandy land, well adapted to peach growing. In the early history of the township peaches never failed. In late years the crop has been more uncertain. Cherries, pears and grapes are grown quite successfully. The first apple orchards were set in the spring of 1845 by W. and R. K. Divine. A year or two afterward Alexander Satterlee set a fine orchard, and orchards were set by Ethan, Henry and Ezra Satterlee. These orchards are all in good bearing condition, only a few trees being killed in the severe winter of 1874-5. Many younger orchards are now in bearing, and the fruit produced is of the very best quality.

"Orchards are doing better on the high, rolling lands, even where the timber was pine, than on the level lands from which the beech and maple have been cleared. The severe winter of 1874-5 killed or severely injured all the young orchards of the northern part of the county.

"Little has been done in the raising of small fruits and berries in the county, there being usually such a supply of wild blackberries in the newly chopped pine forests that there is no inducement for the cultivation of such fruits. Strawberries and raspberries do well, however, and enough are grown for home consumption.

"We consider the future of fruit growing in Montcalm county as very promising. Being near the northern limit of successful culture in the interior of the State, our market will always be good. Good varieties have usually been planted and the quality is always of the best."

There is an auxiliary horticultural society at Greenville, the report from which in 1881 says: "The horticultural resources of our vicinity are gradually developing, and the apple traffic has recently received an impetus which far surpasses the expectations of a few years ago.

"This season Mr. B. S. Bigley, of our society (from what fruit growers would call a small orchard), marketed over \$200 worth of apples, and people generally now believe in the orchard."

In the report of this society for 1883 the secretary notes his observations

respecting the influence of bees in the fertilization of apple blossoms, drawing the inference that the partial loss of a crop of fruit is sometimes due to the failure of their visits.

The census of 1884 shows that this county had, of

Apple orchards 3,357 acres, 79,277 bearing trees, yielding in 1883, 37,147 bushels of fruit.

Peach orchards 35 acres, 1,352 bearing trees, yielding in 1883, 305 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$20,823.00.

Vineyards 8 acres: grapes sold in 1883, 6,130 pounds.
wine made in 1883, -----

Nurseries, none.

Market garden products sold in 1883, \$6,028.00.

MUSKEGON COUNTY.

Muskegon county was set off, organized, and the county seat established at the then village of Muskegon by an act of the State Legislature, approved February 4th, 1859, and which took full effect on June 1st of that year.

The county has since been enlarged by the addition, at the east, of the townships of Moorland, Ravenna and Casinovia.

The name is of Indian origin, signifying "marshy river," or "wet prairie."

In 1812 John Baptiste Recollet established a trading post on the north side of Muskegon lake.

Pierre Constant built the next trading post on the south side, at the outlet of the lake.

The next trading post seems also to have been built on the south side of the lake, in 1830, by Joseph Daily; and in 1833 yet another was established here by George Campeau.

The land in this region was not offered for sale till 1839, but Lewis B. Baddeau pre-empted a tract of land in 1834, which he purchased when it came into market, thus becoming the first permanent settler at Muskegon.

In 1837 a law was enacted by the first State Legislature organizing ten townships and what is now the city of Muskegon into one township, under the name of Maskego. This law was modified by the next Legislature and the same territory re-organized as the township of Muskegon. The orthography of the name, however, was not definitely settled until the establishment of Muskegon postoffice in 1848.

The construction of the first saw-mill at Muskegon was commenced in 1837, and as late as 1841 there was but a single mill in operation there.

In 1841 the only settler north of Muskegon was Charles Mears, who had a little mill on a small creek, near the head of White lake, with a small sloop to ship his lumber to Chicago.

The first railroad reached Muskegon in 1869, it being that between Grand Haven and Muskegon, now a portion of the Chicago and West Michigan Railroad.

Many of the foregoing facts are derived from Hon. H. H. Holt's "Centennial History of Muskegon." (Pio. Col., vol. 1, p. 286.) The following letter, giving a history of fruit culture in this region, is inserted entire:—

MUSKEGON, MICH., MAY 29th, 1886.

T. T. LYON, ESQ., *President State Horticultural Society:*

DEAR SIR:—In reply to your late request for information in regard to the history of horticulture in this county, I will say that there were a few apple and peach trees in this city that were planted by the early Indian traders, which were in bearing when lumbering first began here, and of which there is no information to be obtained as to the date of planting, or by whom planted. These trees were in bearing in 1840, and were in good condition until they were removed some ten years since, to make room for buildings. Some of these peach trees bore fruit nearly every year for more than thirty years. The first attempt at planting an orchard in this county was made by George Ruddiman, who removed to this city, or what is now this city, April 30th, 1840, and who still resides here. He sent to Rochester, N. Y., for an assortment of fruit trees, which reached here in the spring of 1848, coming by sail vessel, by the way of Chicago, in very fair condition. The orchard was planted upon the premises now owned by A. S. Montgomery, near his steam saw-mill, and occupied by Thos. Elston. Among the trees planted at that time, now living, are eighteen apple trees, one pear tree, fourteen cherry trees and three plum trees, most of which are in excellent bearing condition. Among the apple trees are five Baldwins that have never failed of a good crop of fruit by reason of frost or cold weather in winter. Some of these Baldwins are nearly a foot in diameter at the ground, and there is everything to indicate that they are still in their prime. The cherry trees are Black Tartarian, Bigarreau and other good varieties, and are large, healthy trees. Mr. Elston informed me yesterday that the cherries from one tree alone sold for twenty-three dollars last season. The plum trees are healthy, one of them, a Washington, being at least six inches in diameter.

But few shade trees were planted in this city previous to 1860, since which date a great number have been planted, mostly maples and elms, most of which have had a most remarkable growth. Indeed, it is my opinion that if a census of the shade trees of the cities of the State were to be taken, no city could excel Muskegon, either in the number of trees or in their condition of healthy growth; the soil, it seems, being just such an one as they require.

Yours truly,

HENRY H. HOLT.

The Ottawa and Muskegon Agricultural Society was organized in 1856

The agriculture of Muskegon county, however, had not become sufficiently developed to induce the organization of a Muskegon society till the year 1875.

At the first annual fair of the State Pomological Society, held with that of the Kent County Agricultural Society, at Grand Rapids, September 27th to 30th, 1870, Professor C. L. Whitney, of Muskegon, exhibited two hundred varieties of plants and flowers, the product of his greenhouses at that city.

The orchard committee of the State Pomological Society for 1871 awarded a first premium to C. L. Whitney, of Muskegon, for a flower garden.

Also to C. S. Shepherd, of the same place, a first premium, for an acre of strawberries.

The State Pomological Society commenced the formation of auxiliary societies early in the year 1879. Prior to this there seems to have been a horticultural society at Muskegon, upon an invitation from which the State Pomological Society held its summer meeting at this city, on June 17th to 19th, 1879, with an interesting programme and discussions, and a good attendance from abroad. This local society became auxiliary to the State society on December 16th, 1880.

During 1881 the society held two exhibitions, the one a display of strawberries, and the other of grapes and other autumn fruits.

The society held monthly meetings during 1882, one of which, on October 14th, was an exhibition of grapes.

On July 21st, 1883, the decease of the president of the society, S. B. Peck, of Muskegon, occurred in the seventy-ninth year of his age, a loss greatly regretted by an extensive circle of friends and acquaintances.

In 1884 regular monthly meetings were held. The annual display of strawberries and flowers, on June 20th, and that of grapes and other fruits, on September 20th, were excellent.

The society has maintained its efficiency to the present time, and the annual reports of Hon. H. H. Holt, its secretary, are replete with interesting matter.

The census of 1884 gives this county, of

Apple orchards, 2,081 acres, 59,219 bearing trees, yielding in 1883, 13,215 bushels of fruit.

Peach orchards, 463 acres, 35,769 bearing trees, yielding in 1883, 613 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$11,846.00.

Vineyards, 187 acres: grapes sold in 1883, 64,970 pounds.
wine made in 1883, 42 gallons.

Nurseries, none; products sold in 1883, \$627.00.

Market garden products sold in 1883, \$21,500.00.

HURON COUNTY.

Huron county was set off by an act of the State Legislature, approved April 1st, 1840.

The county was organized under an enactment of the Legislature, which took effect upon the qualification of the county officers elected in pursuance of said act at the general election in November, 1860.

The county seat is Bad Axe, which became such in 1873.

The name comes from the Huron Indians, who were formerly called Wyandots. The phrase "Quelles Hures!" (what heads!) was applied to them by an astonished French traveler on seeing their fantastic mode of dressing the hair. The word *hures* was modified to Huron.

No accounts of the early settlement of this county are at hand.

In 1880 the Huron County News says: "A study of its situation, with the deep waters of Lake Huron and Saginaw bay surrounding it on three sides, ought to convince all who understand the ameliorating influence of water

upon climate, that these shores would be especially favorable for fruit. The winters are never so cold here as in the interior and southern parts of the State. The isothermal charts prepared by Professor Alexander Winchell, published in the atlas of the State, show that the January temperature of this point is the same as that of Fort Wayne, Indiana, the great fruit belt on the western shore of the State, Bloomington, Illinois, and northern Missouri. Rarely does the thermometer mark zero, not once during the past winter, while during twelve years of personal knowledge we have only once known the mercury to sink to ten below."

In 1881 "A Glimpse at Michigan Horticulture," says: "A glance at the map will exhibit the fact that it has the longest shore line of any county in the State. Bounded on three sides by deep water, it is admirably situated so far as lake protection is concerned.

"Frost is unknown there in autumn until a month after it has visited the interior of southern Michigan."

In 1883 (Trans., p. 295) the Secretary's Portfolio says: "Since the great fires which destroyed the forests and assisted in clearing up the county, the wild fruit trees have been replaced by large orchards, containing every variety of fruit known to Michigan.

"While peaches are not cultivated on the peninsula with as great success as is met on the western shore of the State, still they are cultivated with far greater success than in the interior, and in Huron county give a more than satisfactory yield. Pears and plums are in every respect an extraordinary crop, and in no portion of the State can be found a county excelling Huron, either in the quality or the quantity of these fruits.

"While peaches, pears, plums, cherries, and grapes excel in Huron county, it will readily be inferred that the apple production must necessarily be of equal value in magnitude and quality of production. Such is the case, and the growing apple orchards of the peninsula give promise of the greatest value. In the culture of fruit in this county not unfrequently a single acre realizes several hundred dollars, after the family demand has been fully supplied."

Professor Emil Bauer, of Ann Arbor, had set apples on the sand ridges near the shore in 1861, and they were still bearing good crops. Some on low ground did not do well. He had also plums and pears in the west part of Huron county, which were doing well. The trees are manured and mulched every year. He spoke highly of the Jonathan apple for that locality. He attributed the success of fruits there largely to the limestone subsoil. The pears do not blight: he thinks the soil being saline prevents it. There are no curculios, and he thinks their larvæ do not like the sand.

A "Brief of Horticulture" by Secretary Garfield (Trans. 1884, p. 174), says of this region: "As yet injurious insects have not seriously troubled the fruit grower, and apples and pears are singularly clean and smooth. Near the shores peaches can be grown with success. There is no question but this will be a grand country for plums and grapes. Plantations of all sorts of fruits are rapidly starting up along the shores of the bay and lake."

The Huron County Agricultural Society was organized in 1869.

According to the census of 1884 there were in the county, of

Apple orchards, 2,861 acres, 47,567 bearing trees, yielding in 1883, 14,362 bushels of fruit.

Peach orchards, 23 acres, 1,069 bearing trees, yielding in 1883, 353 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$13,152.00.

Vineyards, 26 acres: grapes sold in 1883, 15,596 pounds.
wine made in 1883, 229 gallons.

Nurseries, 3 acres; products sold in 1883, \$190.00.

Market garden products sold in 1883, \$810.00.

BAY COUNTY.

Bay county was constituted and organized from the whole of Arenac (which thus ceased to exist as a county, and a portion of Saginaw, by an enactment of the Legislature of the State, approved February 17th, 1857. It was organized in pursuance of the same act, which was approved by the voters of the three counties of Saginaw, Midland and Arenac at the regular township elections, on the first Monday of the following April, whereupon the enactment took effect on the 20th day of April. An election, as provided in such law, was held in the new county, on the first Monday in June, 1857, for the choosing of the regular county officers, and upon their becoming properly qualified the organization of the new county became perfect.

The county seat was established at Lower Saginaw, the name of which place was changed to Bay City, by act of the Legislature, approved February 10th, 1857.

In 1832 Leon Tromley was a resident at what is now Bay City, where he had resided some time as Indian farmer, appointed by the federal government to teach the Indians agriculture. He had built a log house and cleared and cultivated a small parcel of land, thus became the pioneer settler at this point.

The Bay County Agricultural Society was organized in 1866. In its report to the State Board of Agriculture for 1868, says: "The vegetable department was well filled, and that of fruits was highly creditable. The specimens of apples, pears and peaches were very fine. The soil and climate are evidently favorable to fruits, and the Saginaw valley furnishes an excellent market for all kinds."

In 1869 it reported that peaches were plenty and apples as abundant as could be expected from orchards as young as are the most of those in this county. A very superior exhibit of fruits and vegetables was made at the annual fair.

The Bay County Horticultural Society, auxiliary to the State Horticultural Society, was organized during the year 1881.

At its meeting in June, 1882, a grand display of flowers and strawberries was exhibited. Near the close of August a large and fine display of flowers and also of early apples, blackberries and other fruits was made. Soon after this meeting occurred the death of Mr. Wedthoff, the very efficient secretary of the society, whose services were, in many ways, very sadly missed.

The display of vegetables and fruits made by the society at the northeastern fair attracted a great deal of attention.

On June 19th and 20th, 1884, upon an invitation from the Bay County Horticultural Society, the State Horticultural Society held a meeting at Bay

City, which elicited a large attendance. The proceedings were very interesting and profitable, a full account of which appears elsewhere in this volume.

From April to June of this year the black army worm (*Agrostis fernica*, Tauschur), for the first time, were numerous and destructive to vegetation in portions of Bay county and elsewhere.

In a "Brief of Horticulture," Secretary Garfield remarks: "There is a great deal of taste exhibited here in the growing of plants, flowers and shrubbery. The wealth that has accumulated by means of the great lumbering trade is being judiciously expended in building homes and in the development of an advanced agriculture."

The annual report for the year 1884 speaks encouragingly of the future of the society.

In 1875 the society through its president, B. F. Partridge of Bay City, made a creditable exhibit at the meeting of the American Pomological Society at Grand Rapids in September.

This county, according to the census of 1884, had of apple orchards, 1,388 acres, 30,881 bearing trees, yielding in 1873, 7,439 bushels of fruit.

Peach orchards, 8 acres, 3 bearing trees, yielding in 1883, 13 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$5,470.00.

Vineyards, 34 acres: grapes sold in 1883, 23,386 pounds.
wine made in 1883, 2,349 gallons.

Nurseries, 1 acre; products sold in 1883, \$305.00.

Market garden products sold in 1883, \$17,813.00.

MIDLAND COUNTY.

This county was set off by an act of the Legislative Council of the Territory, approved March 2d, 1831.

It was organized under an act of the State Legislature, approved March 29th, 1850, and amended February 8th, 1855. The organization was given effect from and after December 31st, 1850. The law established the county seat at Midland City.

The county lies in the valley of the Tittabawassee river, and is therefore a portion of the great Saginaw valley, and, like it, is a comparatively level region, with few if any portions elevated more than one hundred and fifty feet above the waters of Saginaw bay.

This county has received a portion of the immigration that has poured into the Saginaw valley during the past forty or fifty years, but no facts are at hand showing dates or extent of settlement, or the present condition of the horticulture of the county, save that a beautiful display of apples from the Midland Fair Association was shown at the State fair of 1885, at Kalamazoo, the appearance of which, and the statements of the exhibitors, indicating the possibilities of fruit culture in the county.

Midland county, according to the census of 1884, had of apple orchards, 879 acres, 15,078 bearing trees, yielding in 1883, 4,239 bushels of fruit.

Peach orchards, none, 4 bearing trees yielding in 1883 no fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$3,587.00.

Vineyards, 2 acres: grapes sold in 1883, 80 pounds.
wine made in 1883, none.

Nurseries, none; products sold in 1883, \$2.00.

Market garden products sold in 1883, \$958.00.

ISABELLA COUNTY.

Isabella county was set off by an act of the Legislative Council of the Territory, approved March 2d, 1831, and was organized under an act of the State Legislature, which took full effect upon the qualifying of the county officers elected in pursuance of its provisions, on the first Monday of May, 1859.

The county was named from Isabella, queen of Spain, the patroness of Columbus.

Mount Pleasant is the county seat. It was settled in 1861.

In 1880 Horace A. Bigelow, in "History of Michigan Horticulture," states in substance that, prior to 1854, Isabella county was an uninhabited forest. On October 20th, 1854, he located a half section of land in the township of Coe. In the fall of 1856 he planted thereon an orchard of apple trees, which were purchased of Mr. Hagerman, a nurseryman of Blissfield, Lenawee county, Michigan. Five or more different orchards were planted from this importation of trees, which proved to be of varieties adapted to the locality. Among them were Northern Spy, Bellflower, Talman Sweet, and Golden Russet (of western N. Y.), also a few labeled Virginia Red Streak, a common variety in Blissfield, and which proves valuable here also. Red Canada, Baldwin and Rhode Island Greening prove unfit for this region. Wagener, Twenty-Ounce, Ben Davis, Rambo, Fameuse, Bailey Sweet, Early Harvest, Early Joe, Early Strawberry, Fall Pippin, Late Strawberry, Maiden's Blush, Grimes' Golden, White Pippin and Red Astrachan, are named as adapted to the locality.

The most vigorous and healthy of the oldest apple trees here are Northern Spy, Golden Russet, Talman Sweet and Virginia Red Streak. Flemish Beauty and Bartlett pears are safest and surest here. Most kinds of plums do well. At this time some thirty plum trees in my garden are heavily loaded. Peaches are not reliable here, though what few there are promise an abundant yield of fruit this season. The hardier grapes, like Delaware and Concord, do well here.

A. A. Loveland, in "A Brief of Horticulture," in 1884, says, in effect: This is a new county, and orchards are young; but apple orchards now coming into bearing pay \$100 per acre, and all the leading varieties succeed admirably. As yet the crops are consumed at home.

Pears succeed well on drained clay soil. They sometimes require protection the first winter, but are hardy thereafter.

This is pre-eminently a plum country. All kinds succeed, from the Wild Goose, which ripens in July, to Coe's Golden Drop, which matures in October. They are perfectly hardy and free from diseases and insects. No

large orchards have as yet been planted, and our home market consumes all that are raised. Trees commence to bear the third year from setting, and the fifth year give good returns. Clay soils are best.

All kinds of small fruits are successful, although strawberries, only, are much grown. The Indians supply raspberries and blackberries cheaper than we can grow them.

This county, according to the census of 1884, had, of

Apple orchards, 2,087 acres, 33,690 bearing trees, yielding in 1883, 10,256 bushels of fruit.

Peach orchards, 4 acres, 35 bearing trees, yielding in 1883, one bushel of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$8,362.

Vineyards, 4 acres: grapes sold in 1883, 260 pounds.
wine made in 1883, none.

Nurseries, none; products sold in 1883, \$10.00.

Market garden products sold in 1883, \$1,864.00.

MECOSTA COUNTY.

This county was laid off by act of the State Legislature, approved April 1st, 1840. It was organized under the provisions of an act approved February 11th, 1859, which provided for the completion of its organization on the first Monday in May, 1859.

The name of the county seat was originally Leonard, which was changed to Big Rapids by the Legislature, February 22d, 1865.

No information is at hand respecting the early settlement and orchard planting of this county.

In 1884 in "A Brief of Horticulture," F. A. Howig of the Pioneer communicates a few items which are herein condensed as follows:—

An orchard about four miles west of Big Rapids, partially in the edge of a pinery, is probably eighteen years old, and produces large crops annually. Most of the orchards are young and only partially in bearing. Our market is perhaps one-fourth supplied from local orchards.

Strawberries succeed admirably, as do all the berries, for which the soil and climate seem well adapted.

Potatoes are at home in our soil and climate, and vegetables in general do exceptionally well.

A Mecosta County Agricultural Society was organized in 1874.

According to the census of 1884 this county had of apple orchards 1,821 acres, 24,788 bearing trees, yielding in 1883, 6,420 bushels of fruit.

Peach orchards, 19 acres; 45 bearing trees, yielding in 1883, 7 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$6,631.00.

Vineyards, none: grapes sold in 1883, none.
wine made in 1883, none.

Nurseries, 3 acres; products sold in 1883, \$225.00.

Market garden products sold in 1883, \$4,682.00.

NEWAYGO COUNTY.

This county was laid off by act of the State Legislature, approved April 1st, 1840. It was organized in pursuance of an act approved June 27th, 1851, which provided for the perfecting of the organization on the first Monday in January, 1852.

The county seat is Newaygo, an Indian word signifying "much water." It was incorporated as a village in 1867.

The early occupancy of this county seems to have been mainly for lumbering purposes. But little information respecting these matters can be obtained, and the same is true of its condition horticulturally.

A Newaygo County Agricultural Society was organized in 1871.

In 1874 a union agricultural society was organized at Fremont Center, which being located in a more especially agricultural region, may have been intended to absorb or supersede the earlier organization. The two regions are, however, in a measure independent of each other; the one finding its outlet to Grand Rapids over the Grand Rapids and Newaygo railroad, and the other being tributary to Muskegon over a branch of the Chicago and West Michigan railroad.

According to the census of 1884, this county had of apple orchards 2,435 acres; 47,890 bearing trees, yielding in 1883, 21,332 bushels of fruit.

Peach orchards, 62 acres, 4,041 bearing trees, yielding in 1883, 639 bushels of fruit.

The value of orchard products of all kinds of fruit, sold or consumed in 1883, was \$16,396.00.

Vineyards, one acre: grapes sold in 1883, 500 pounds.
wine made in 1883, 3 gallons.

Nurseries, none; products sold in 1883, none.

Market garden products sold in 1883, \$2,546.00.

OCEANA COUNTY.

Oceana county was set off by an act of the Legislative Council of the Territory, approved March 2d, 1831, and was organized under the provisions of an act of the State Legislature, approved February 13th, 1855, which provided for the perfecting of such organization on the first day of June, 1855.

The county seat is at the village of Hart.

The following account of the topography of the county is condensed from a valuable communication by D. L. Garver, of Hart:—

There is, perhaps, no other single county in the State which presents a greater variety of soil and surface—of rich agricultural land and barren, sandy plains. A small portion is tenacious clay, and about one-half the county is a rich sandy loam. The remainder is not regarded as desirable so long as better lands are available. A portion of the surface is quite hilly, but much of it is only gently rolling.

In the southwestern portion of the county, in the township of Clay Banks,

the land is quite elevated, with many boulders, but too level for effective air drainage, and hence not suited to the growing of the more tender fruits.

The southern tier of townships is too level for any but the more hardy fruits, while the eastern portion is too far from the lake. The townships of Benona, Shelby, Golden, Hart and Weare can hardly be surpassed by any portion of the State for the cultivation of the fruits adapted to this climate, owing to their undulating surface and proximity to Lake Michigan, elevated as they are from two to three hundred feet above its surface.

The earlier practice was to plant fruits close to the water, under the impression that moist air would prevent frost, but more recently elevated locations are preferred.

Mr. Garver located in Oceana when the country was very new, and has, from the first, made fruit culture a prominent feature of his farming.

From past experience, he would plant apple trees forty feet apart each way for free exposure to air and light, and for greater convenience in gathering the fruit and in cultivation.

Among the apples which he has tested, of the following he would only plant a tree or two for home use, viz: Early Harvest, Alexander, Golden Sweet, Fameuse, Scarlet Pearmain, Autumn Strawberry, Hawley, Autumn Swaar, Fall Pippin, Rambo, Swaar, Wagener, Stark, Primate, Pomme Gris, Red Cheek Pippin, Jersey Sweet and Danvers' Sweet.

For market he would prefer Red Astrachan, Oldenburgh, Maiden's Blush, Twenty Ounce, Gravenstein, Colvert, Rhode Island Greening, Baldwin, Fall-water and Talman Sweet.

His orchards contain eight hundred apple trees, about half of which are unprofitable varieties.

A small peach orchard, planted twenty years ago, principally Early and Late Crawfords, were dug out in 1886. The Early Crawfords bore fairly productive for nearly eighteen years. The Late Crawfords were comparatively unprofitable. The Barnard seems well adapted to his soil. He also had a small orchard of the Garver peach, a seedling of his, which had proved profitable, very hardy, and commanding in 1885, three dollars per bushel.

Recently the curculio had become troublesome, attacking peaches as well as plums. As a remedy he practiced jarring.

He tried high manuring and cultivation, but finds that the peach will not bear this kind of crowding as well as a field of corn.

He had raised plums nearly every year for twenty years, but recently the curculio had come to be "a terror."

He thinks they are too far north to raise the best quality of grapes, but, by training them upon the sides of buildings, and letting them hang late, they do very well.

In 1849 the Oceana County Agricultural Society was organized.

In March, 1876, the annual meeting of the Oceana County Pomological Society occurred at Hart, on which occasion a large and fine display of apples, canned plums and peaches was exhibited.

T. T. Lyon, who chanced to be in attendance, improved the opportunity to examine an extensive orchard of apples and plums then recently planted by Judd & Hand, of Hart. Also the orchards of D. L. Garver, already noticed, together with the older bearing plum, peach, and apple orchards of C. A. Sessions, at Blackberry Ridge, near Sammon's Landing, together with several peach and other orchards in that vicinity, a region which had already begun

to attract a good deal of attention as a favorable location for the growing of the more delicate fruits.

The Oceana Pomological Society contributed to the Centennial display of the Michigan State Pomological Society at Philadelphia, in September and October, 1876, forty-eight varieties of apples, nine of pears, three of peaches and three of crab apples.

E. J. Shirts, of Shelby, also contributed apples and plums.

In 1877 the following entries of plantations were made from this county for the examination of the orchard committee of the State Pomological Society, viz: by—

- L. Chubb, Blackberry Ridge, young peach orchard.
- L. Chubb, Blackberry Ridge, bearing peach orchard.
- L. Chubb, Blackberry Ridge, plum orchard.
- C. A. Sessions, Blackberry Ridge, peach orchard.
- J. H. Sammons, Blackberry Ridge, peach orchard.
- Chas. W. Jay, Blackberry Ridge, peach orchard.
- Chas. W. Jay, Blackberry Ridge, young peach orchard.
- Chas. W. Jay, Blackberry Ridge, plum orchard.
- Chas. W. Jay, Blackberry Ridge, quince orchard.
- Wm. Sours, Blackberry Ridge, pear orchard.
- Wm. Sours, Blackberry Ridge, plum orchard.
- C. A. Sessions, Blackberry Ridge, apple orchard.
- H. E. Russell, Hart, apple orchard.
- W. F. Lake, Shelby, apple orchard.

On March 2d, 1878, at a meeting called for that purpose, at Pentwater, the Oceana and Lake Shore Horticultural Society was organized, to fill the place of the former Oceana County Pomological Society, which had become disorganized. The new society subsequently became auxiliary to the State Pomological Society.

The summer meeting of the State Horticultural Society was held at Pentwater on June 20th and 21st, upon the invitation of the county society. The attendance was large and the exercises highly interesting. It was referred to in the annual report of the local society as the event of the year.

In 1884 Secretary Garfield, in "A Brief of Horticulture," says: "Oceana is the great plum county of the State, not that it is any better adapted to the culture of this fruit than other localities to the north and south of it, but plums have been made something of a specialty, which has popularized the locality. Large orchards of peaches lie upon and near the lake shore."

According to the census of 1884 Oceana county has of apple orchards, 3,476 acres, 82,806 bearing trees, yielding in 1883, 14,071 bushels of fruit.

Peach orchards, 864 acres, 34,653 bearing trees, yielding in 1883, 4,178 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$16,486.00.

Vineyards, 207 acres: grapes sold in 1883, 500 pounds.
wine made in 1883, 90 gallons.

Nurseries, 3 acres; products sold in 1883, \$300.00.

Market garden products sold in 1883, \$2,008.00.

ARENAC COUNTY.

This county was set off by act of the Legislative Council of the Territory, approved March 2d, 1831, but became part of Bay county by virtue of an act of the Legislature of the State, approved February 10th, 1857.

GLADWIN COUNTY.

Gladwin county was set off by act of the Legislative Council of the Territory, approved March 2d, 1831. It was organized in pursuance of an act of the State Legislature, approved April 8th, 1875, and an amendment thereto, approved April 29th, 1875, by virtue of which the organization was accomplished on the first day of June, 1875.

The county seat is Gladwin.

According to the Gladwin County Record of May 21st, 1886, the first permanent settlement in this county was by Marvil Secord, in 1862, who was soon followed by Benjamin Teeple, Willard Grout and others.

According to the census of 1884 this county had of apple orchards, 100 acres, 623 bearing trees, yielding in 1883, 262 bushels of fruit.

Peach orchards, none, 1 bearing tree, yielding in 1883 one bushel of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$244.00.

Vineyards, none: grapes sold in 1883, none.

wine made in 1883, none.

Nurseries, none; products sold in 1883, none.

Market garden products sold in 1883, \$1,920.00.

The Gladwin County Record of July 16th, 1886, says: "The primitive condition of Gladwin, as a farming county, is shown in the fact that, in 1885, only 61 acres are reported in orchards, and the business of fruit, large and small, sold aggregate only \$285.00. These figures are of little value, save as a starting point, and fifty per cent addition is none too great to make for the year 1886."

The northwestern portion of the county reaches an elevation above Lake Huron of about six hundred feet in the upper portion of the Tittabawassee valley.

CLARE COUNTY.

This was formerly known as Kaykakee county. It was set off and organized as Clare county by an act of the Legislature, approved March 16th, 1871.

The county seat was established by the Legislature at Farwell, which was settled in 1870.

No information is at hand respecting the early settlement or the horticultural improvement of the county.

The southeastern portions of the county are drained by the affluents of the

Saginaw, and the Muskegon passes through its northwestern borders. The dividing ridge being elevated 500 to 600 feet above the level of Lakes Huron and Michigan.

The census of 1884 shows that the county had, of

Apple orchards, 178 acres, 1,838 bearing trees, yielding in 1883, 412 bushels of fruit.

Peach orchards, none; 46 bearing trees, yielding in 1883, one bushel of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$384.00.

Vineyards, none: grapes sold in 1883, 25 pounds.

wine made in 1883, none.

Nurseries, none; products sold in 1883, none.

Market garden products sold in 1883, \$132.00.

OSCEOLA COUNTY.

This county was set off in 1840 as Unwattin county. It was organized under its present name by act of the Legislature, approved March 17th, 1869, and the organization was completed on the first day of July, 1869.

The county seat is at Hersey, a village on the Muskegon river, first settled in 1867.

The county was named from the Seminole chief of that name.

The following particulars are collected from the statements of W. L. Stoddard, of Evart, secretary of the county agricultural and horticultural societies, and Geo. E. Newell, of Ashton.

B. F. Gooch settled at or near Hersey in the fall of 1854, and in the spring of 1856 moved his family here, bringing with them fruit trees for an orchard, and in doing so cut his own road for a distance of nearly thirty miles.

D. A. Blodgett also located at or near Hersey in 1851, embarking in the business of lumbering for several years before he gave especial attention to farming.

The two were also pioneers in orchard planting, as each planted an orchard at an early date, probably prior to 1860. With Mr. Gooch came also Alexander McFarlane and F. S. Robbins, both farmers.

The trees planted by Mr. Gooch were purchased of John Tuxberry, four miles north of Grand Rapids, Michigan, and were successful and of satisfactory varieties. In many of the earliest plantings orchards suffered more or less severely from the burning of fallows and timbered lands in close proximity.

Among the varieties of apples which have been found successful here are Golden Russet (of western New York), Twenty-ounce, Wagener, Fall Pippin, Talman Sweet, Northern Spy, Sweet Pear and Westfield Seeknofurther. Cherries, so far, have not been found successful.

Down to the present time the local market has consumed the surplus fruit.

There is a nursery at Sears, in the southeastern part of the county, and a smaller one at Tustin, in the northwest, both which are said to be in a prosperous condition. There are also seedling apple nurseries on many farms, in nearly every township in the county, from which many thrifty orchards have been planted.

The county is yet comparatively new, Hersey, the oldest town, being only about twenty years of age, Reed City not far from seventeen years and Evart not quite as old.

An Osceola County Agricultural Society was organized in 1867.

An Osceola County Horticultural Society was organized in 1886 which works in harmony with the former in the promotion of interests common to both.

At the first the growing of fruit was, to a great extent, an experiment, so far at least as introduced varieties were concerned.

Another serious drawback was flooding the county with worthless nursery stock.

Many also make the mistake of planting too closely, often less than twenty feet apart.

The recently introduced Russian varieties of fruits prove hardy and successful here.

Hardy varieties of peaches have occasionally ripened here; but, as a rule, the peach and the quince require protection in winter.

The Concord and other hardy grapes succeed, if protected during winter.

The strawberry is quite at home here, and many other small fruits grow wild so abundantly that there is little occasion for their cultivation.

Spring frosts are a discouragement, since the ground does not become frozen in winter, and growth therefore commences early. The remedy lies in planting with a northern aspect, removing the snow to permit freezing, or perhaps in mulching.

Messrs. Gooch and Blodgett have upon their places some fine ornamental trees now eighteen or twenty years of age.

Two beautiful maple groves have been preserved on the outskirts of Reed City.

The setting of shade trees along streets and highways is being encouraged and private grounds and lawns in villages are being ornamented and otherwise improved.

The census of 1884 reports in Osceola county, of

Apple orchards, 1,172 acres, 8,929 bearing trees, yielding in 1883, 1,716 bushels of fruit.

Peach orchards, 71 acres, 60 bearing trees, yielding in 1883, 412 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$2,447.00.

Vineyards, one acre: grapes sold in 1883, none.
wine made in 1883, none.

Nurseries, three acres; products sold in 1883, \$35.00.

Market garden products sold in 1883, \$2,273.00.

This county has an elevation of from five hundred to seven hundred feet above the waters of the surrounding lakes, Huron and Michigan.

LAKE COUNTY.

This county was set off as Aishcum county, by Legislative enactment, approved April 1st, 1840. The name was changed to Lake by the act under which it was organized.

Lake county was laid out and organized by an act of the Legislature, approved March 18th, 1871.

The seat of justice is Baldwin City, which was first settled in 1872.

Apples, says Mr. A. Ozmun, of Baldwin, were first planted in this county by W. J. McCansy, on the east side of a small lake, and were well cared for. Some of the trees are now bearing fair crops. The varieties planted were Ben Davis, Hyslop and Transcendent crabs.

Several other plantations of apple orchards are spoken of as being generally, but indifferently, successful, and the same is stated of pears and peaches.

N. I. Kinne had succeeded in growing apples and grapes, but no one had been able to make apple growing profitable. Small fruits are produced abundantly and in perfection.

The county lies partially within the basins of Pere Marquette and Manistee rivers, with an elevation varying from one hundred and fifty to five hundred feet above the level of Lake Michigan.

Lake county, according to the census of 1884, had of apple orchards, 420 acres, 4,767 bearing trees, yielding in 1883, 908 bushels of fruit.

Peach orchards, 3 acres, 33 bearing trees, yielding in 1883, 13 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$1,056.30.

Vineyards, none.

Nurseries, none.

Market garden products sold in 1883, \$582.00.

MASON COUNTY.

This was originally set off as Notipeago county by Legislative enactment, approved April 1st, 1840. The name was changed to Mason by the act of organization.

Mason county was organized under an act of the Legislature approved February 13th, 1843.

The county was named in honor of Stevens T. Mason, the last territorial and the first State governor of Michigan.

The Legislature located the county seat at Au Sable by act approved February 28th, 1861. It was subsequently removed to Ludington, where it still remains.

The mouth of the Pere Marquette river was visited by the Jesuits in their voyage of discovery at a very early day. It has been stated, though upon doubtful authority, that here was the final (though now unknown) resting place of the notable personage from whom the river was named. However this may be, it was doubtless the temporary resting place of Indians, traders and missionaries in their frequent early canoe voyages about the lakes.

Of the earliest settlements, more or less of them by lumbermen, the records are not at hand.

Of the early fruit tree planting, L. W. Rose, of Ludington, secretary of the Mason County Horticultural Society, says, in effect:—"The first orchard

in this region was planted by Burt Caswell in 1851. He planted about one hundred trees, mostly Northern Spys and Rhode Island Greenings. He sold some of the first fruits in the village of Pere Marquette, now the city of Ludington, for \$2.50 per bushel."

The cherry trees, planted in 1856, have proved very profitable to the owner. In 1869 the crop sold for \$200. From one tree of Bigarreau twelve bushels were sold, at twenty cents per quart, amounting to \$76.80.

In 1861 Richard Hatfield planted a tree of Bigarreau cherry, which is now (1886) in perfect health, measuring two feet in diameter at two feet from the ground. From this tree over twelve bushels of cherries were picked in 1885.

The oldest fruit tree in the county stands on the bluff of Lake Michigan, about one mile south of Pere Marquette river. It probably sprung from seed accidentally dropped or planted by the Indians. The trunk, at the height of three feet, is two feet in diameter. Its age is unknown. In the fall of 1856, Richard Hatfield gathered from it twenty-eight bushels of apples. An Indian living in this county, named Good John, who is more than eighty years old, says he picked apples from this tree when a boy. It is supposed to be above an hundred years old.

The Mason County Agricultural Society was organized in the year 1870.

The county lies mainly in the basin of the Pere Marquette river, but it also includes those of the Great and Little Sable, which enter Lake Michigan north of Ludington. The surface varies in height between fifty and five hundred feet above the level of Lake Michigan.

According to the census of 1884, the county had, of

Apple orchards, 1,506 acres, 35,812 bearing trees, yielding in 1883, 9,263 bushels of fruit.

Peach orchards, 306 acres, 9,347 bearing trees, yielding in 1883, 839 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$13,281.00.

Vineyards, 11 acres: grapes sold in 1883, 150 pounds.
wine made in 1883, none.

Nurseries, 2 acres; products sold in 1883, \$150.00.

Market garden products sold in 1883, \$5,536.00.

The Fruit Growers' Association of Mason county was organized on March 10th, 1882.

Its report for that year says: There are orchards of several thousand plum trees in this vicinity, our experience with which might warrant us in giving our opinion as to varieties most successful here. We have found the following among the best: Lombard, Purple Magnum Bonum, Yellow Egg, Prince Englebert, Bradshaw, Coe's Golden Drop, German Prune, Pond's Seedling, Canada Egg and Green Gage. We find Purple Magnum Bonum the most healthy, best growing tree, and one of the best, if not the best of plums in size, quality and color. Coe's Golden Drop is least liable to rot. Green Gage stands next to it in this particular.

Geo. C. McClatchie, in "A Primer of Horticulture," says, in effect: That premature shedding of the leaves, curculio, and rot, are the three chief obstacles to success in plum culture. Unlike apples or peaches, this fruit will not succeed on lands seeded with grass or grain crops. The attempt to grow plums without heavy manuring and thorough cultivation will surely fail. The jarring process will lead to certain victory over the curculio,

if diligently prosecuted. Its cost need not exceed ten cents per tree. For the rotting of the fruit, he had no certain remedy.

At the meeting in July, 1883, strawberries were discussed, and some fine fruit was shown. The Wilson was considered the best market berry.

Cherries were discussed at the next meeting. The Mayduke seemed to be the preferred variety.

At the State fair, in September of this year, the society, through G. C. McClatchie, made an exhibit of fruits. The entry was for the best and largest collection; but the fruit, having been unnecessarily detained at the Ludington depot, arrived too late to compete for a premium. It was, however, placed on exhibition, and was awarded a diploma for superior excellence.

The report adds further: "Fruit raising has been thoroughly tested, and peaches, pears, plums and apples grow to great perfection."

IOSCO COUNTY.

This was originally set off as Kanotin county. The name was changed to Iosco by the act of organization.

Iosco county was organized in pursuance of an act of the Legislature, approved February 16th, 1857, and which provided for the completion of such organization on the Monday after the first Tuesday in July, 1857.

The Legislature fixed the seat of justice at Ottawas Bay, but it was subsequently removed to Tawas City, where it now is.

Iosco is said to be an *illegitimate* Indian word, which Schoolcraft interpreted to mean "water of light."

This county has been, so far, mainly occupied for the purpose of lumbering, a business to which on account of its numerous streams it is well adapted. Its agricultural and horticultural capacities are even yet but slightly developed. Its climate, modified as it is by its proximity to Lake Huron, is believed to be well adapted to fruit culture, wherever suitable soils occur.

The county is watered by the Au Gres, Tawas and Au Sable rivers, and its elevation rises from the level of Lake Huron, which bounds it at the east and southeast, to two hundred feet, and at the northwest to probably five hundred or even six hundred feet.

Extensive deposits of plaster exist near Lake Huron, in the southern part of the county, which have been utilized for many years.

Little is known respecting the extent or success or attempts at horticultural operations, save that they have been confined to the supplying of the local demand.

Iosco county, according to the census of 1884, had of apple orchards, 143 acres, 1,833 bearing trees, yielding in 1883, 239 bushels of fruit.

Peach orchards, 13 acres, no bearing trees.

The value of orchard products of all kinds, sold or consumed in 1883, was \$255.00.

Vineyards, none.

Nurseries, none.

Market garden products sold in 1883, \$2,074.00.

OGEMAW COUNTY.

This county was laid off by act of the Legislature, approved April 1st, 1840, and was organized under the provisions of an act approved April 27th, 1875.

The county seat is at West Branch, a station on the Jackson, Lansing and Saginaw railroad, which traverses the southwestern portion of the county.

This county occupies the upper basin of Rifle river, a portion of the great central plateau of the lower peninsula, elevated from two hundred to six or seven hundred feet above Lakes Huron and Michigan.

The settlement of the county occurred but recently, and the horticultural improvements are yet few and incomplete.

The census of 1884 gives to this county of apple orchards, 203 acres, 227 bearing trees, yielding in 1883, 44 bushels of fruit.

Peach orchards, 8 acres, 8 bearing trees, yielding in 1883, 2 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, \$160.00.

Vineyards, none.

Nurseries, 3 acres; products sold in 1883, none.

Market garden products sold in 1883, \$300.00.

An extract from a local paper dated September, 1886, says: "John Klocking, the pioneer of his township which bears his name, has presented us with a sample of some of the plums which grew on his farm this year. He has two varieties of the Egg plum, red and yellow. The yellow is much the larger, but both are as luscious as any we have ever tasted. Mr. Klocking had but few this year, but has a large number of trees and will have an abundance in a few years. He will this year have over two hundred bushels of apples, and he has well demonstrated the fact that for fruit growing Ogemaw county is inferior to none in the State."

ROSCOMMON COUNTY.

This county was laid off by act of the Legislature, approved April 1st, 1840, as Mikenauk county.

It was organized as Roscommon county, in pursuance of an act approved March 20th, 1875, which organization was perfected on the first Monday in April, 1875.

The county seat is Roscommon.

This county occupies a central portion of what may be called a bench of the great northern plateau of the lower peninsula, with an elevation of three hundred to seven hundred feet above the level of the great lakes. Higgins and Houghton lakes, in the west half of the county, give rise to Muskegon river, while Au Sable river, an affluent of Lake Huron, takes its rise in the eastern part.

Its elevation varies from three hundred to seven hundred feet.

The Jackson, Lansing & Saginaw railroad was built through the north-

western portion of this county during the first half of the last decade. Beyond the operations of lumbermen little was done in the way of a settlement of this county, until the construction of this road opened an outlet.

According to the census of 1884 the county had of apple orchards, 5 acres, 75 bearing trees, yielding in 1883, 50 bushels of fruit.

Peach orchards, none.

Vineyards, none.

Nurseries, none.

Market garden products sold in 1883, \$1,695.00.

MISSAUKEE COUNTY.

This county was laid off by act of the Legislature approved April 1st, 1840, and it was organized in pursuance of an act approved March 11th, 1871, which organization was perfected on the second Tuesday after the first Monday in April, 1871.

Lake City is the county seat.

This county lies upon the western portion of the central plateau, with a drainage almost wholly southeastward into Muskegon river; although the Manistee river crosses the extreme northwest corner, and its branches drain the northern margin.

The county has an elevation of six or seven hundred feet above the level of Lake Michigan. Its most convenient outlet at present is by way of the Grand Rapids & Indiana railroad, which passes through the eastern portion of the adjacent county of Wexford, lying west of this county, the construction of which about the beginning of the last decade, afforded the access needful for the settlement and development of this, as well as adjacent counties.

The county is even yet too recently settled to have properly demonstrated its capacities as a fruit-growing or horticultural region, although its wild native fruits are assurance of abundant capacity for the production of what are usually designated as small fruits.

The census of 1884 affords some indication of the condition of fruit culture at that time, when the county reported of apple orchards, 137 acres, 1,122 bearing trees, yielding in 1883, 425 bushels of fruit.

Peach orchards, 5 acres, 70 bearing trees, yielding in 1883, 35 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$356.00.

Vineyards, none.

Nurseries, none; products sold in 1883, \$150.00.

Market garden products sold in 1883, \$956.00.

That the soils here possess the requisite elements for the successful growth of fruits, and that the modifying influence of Lake Michigan is potent, even at this distance, would seem to be obvious from the foregoing census reports.

WEXFORD COUNTY.

This was set off as Kautawaubet county by an act of the Legislature, approved April 1st, 1840. The act of organization applied the name Wexford.

Wexford county was organized in pursuance of an act of the Legislature, approved March 30th, 1869.

The county seat, originally located at Sherman, has been transferred to Cadillac.

Lumbering has been and still is a leading business in this county, the product finding an outlet down the Manistee river and its branches till the construction of the Grand Rapids & Indiana railroad, which passes through the eastern tier of townships of the county. Since the opening of this road large quantities of lumber have been sent over it and distributed in States south of Michigan.

Wexford lies almost wholly within the basin of the Manistee and Little Manistee rivers, although the waters of Clam lake, near its southeast corner, find their way to the Muskegon.

The elevation of the county varies from two to seven hundred feet above the waters of Lake Michigan.

As indicated by the last census (that of 1884), but slight attention has so far been given to the development of the horticultural capacities of the county. At that time it had of

Apple orchards, 519 acres, 4,681 bearing trees, yielding in 1883, 610 bushels of fruit.

Peach orchards, 95 acres, 4 bearing trees, yielding in 1883, 4 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883, was \$1,380.00.

Vineyards, one acre: grapes sold in 1883, none.
wine made in 1883, none.

Nurseries, none.

Market garden products sold in 1883, \$2,017.00.

During the winter of 1885-6 a Wexford County Horticultural Society was organized with the aid of Secretary Garfield, of the State Horticultural Society.

In the report for 1886 it is remarked: "The proverbial 'fruit tree agent' came to this region 'early and often,' and convinced many of our farmers that the tropical fruits would do well here if properly planted, and they gazed accordingly, with watering mouths and longing eyes, at the fine pictures of peaches and other tender fruits shown by the agent, ordered a good supply, planted the stock (usually stunted), watched it lovingly and tenderly, saw it all die, and then threw the stumps away, with the conclusion that this country is not good for fruit."

A very pleasant and profitable strawberry festival was held in June.

An interesting and instructive meeting was held in November, at which the success of many varieties of fruits was discussed, and Mr. Crosby, the president, was delegated to attend the annual meeting of the State Horticultural Society the next week, to secure the identification of unknown varieties.

MANISTEE COUNTY.

Manistee county was laid off by act of the Legislature, approved April 1st, 1840, and was organized in pursuance of an act approved February 13th, 1855.

The county seat is at the city of Manistee, which was first settled about the year 1846, and became an incorporated city March 15th, 1869.

The name is Indian, and in their language is understood to signify the spirit of the waters.

The county lies in the lower Manistee basin, although the river Aux Bees Scies (Betsey river) makes a short detour across the north line of the county.

The elevation varies with the location, from fifty to probably two hundred feet above Lake Michigan.

The original settlements were for lumbering and for purposes more or less directly connected with that interest; but as early as during the seventh decade the incidental experiments in fruit growing had demonstrated the favorable character of the climate, and the planting of fruits had been commenced on a more extensive scale. Plums were found to be especially successful and to be mainly free from the maladies which frequently attack them further south. Apples and pears also were very successful, and even peaches, on suitable localities, were grown with more or less certainty.

S. W. Fowler, in "History of Michigan Horticulture," says the first fruit trees were planted in the county in 1849, by James Stronach, Sen., at a small place known as Old Stronach. Some of these trees yet remain, near the first framed house built in the county.

Robert Ridsen planted the first plum orchard in the county about the year 1869. (This orchard is spoken of elsewhere.)

Later D. L. Filer & Sons planted over three thousand peach, plum, and other trees, which now yield them a large revenue.

Planting has increased, till now (1880) there is a thriving orchard on nearly every farm.

The first nursery was commenced at Bear Lake, by James M. Fairbanks, 1868. His death occurred a few years after, when the business was discontinued.

The secretary of the Bear Lake Farmers' Club says in 1871: "The potato beetle made its appearance here, but did no damage. There is not much fruit raised here yet, it being a new county, but the prospects are good. I never saw better quality than was to be found in the samples shown at our fair last fall."

The following letter is given entire:

MANISTEE, MICH., May 27th, 1887.

President T. T. LYON:

DEAR SIR—Your letter respecting History of Horticulture is at hand. I have conferred with Mr. Mukantz in regard to the matter and he assures me he will give it the necessary attention. With us horticulture is yet in its infancy and largely experimental. Until within a very few years our people paid but little attention to anything except the rapid slaughtering of the pine forests, and the quickest and most successful way of converting them into money. But lately, as these forests have melted away under the blows of the woodman's ax, and men find it more difficult to obtain employment in this branch of business, they naturally begin to turn their attention to

something else, and the result is, a largely increased and rapidly increasing number of farms and farmers, gardens and gardeners. Closer attention also and more anxious inquiries are given to horticultural matters. Increased attention is being given to the growing of small fruits to which our warm, sandy soil and moist atmosphere are well adapted. In the near future I expect to see this one of our leading enterprises, and Manistee a great exporting point for these products. Our springs are late, which brings our fruit into market when all other points are nearly through shipping, and invariably insures good prices to the producer. Now, a few words in regard to plum culture. One of the oldest orchards of any extent was planted by Robert M. Risdon some twenty years ago. Under good cultivation the trees grow rapidly, commenced bearing very young, and produced immense crops of the finest fruit I ever saw for several years. Mr. Risdon, who took great pride in his orchard, having died, it passed into other hands, was neglected, uncultivated and uncared for. Then came the curculio, hitherto unknown in this region, and took exclusive possession. The orchard was left to its fate. Year by year the trees became more diseased and weaker, and the few now left are entirely worthless. This is not a cheerful picture; but what neglect and abandonment did for this orchard, it will do for everyone. At the time when these trees were given up to the curculio it was generally supposed that nothing could save a crop when attacked by it. Our subsequent experience has taught us that it is a comparatively easy matter to master this little pest. Our plum growers now save their fruit every year; and, in the light of this knowledge, old orchards are growing and new ones being planted every season. The remedy we use is this: Dissolve an oval teaspoonful of London purple in a pail of water; spray the trees thoroughly with this mixture, just as the trees are out of bloom. If a rain follows very soon, a second application is needed. Do not make the mixture stronger, or the foliage may be injured. Some use Paris green, but it is not as safe, being much more likely to injure the foliage. Mr. Hurlbut, who grows plums quite extensively in the northern part of the county, tells me this treatment has never failed him. Others near by have used it under my own observation, and the result is invariably a good crop of fruit. For a time we were ready to give up to the curculio, but we now think we have mastered him, and expect to grow an abundance of plums in the future. I trust this letter may not weary you. I did not intend to write at such length.

Very truly,

EDWIN RUSSELL.

The Manistee Horticultural Society was organized January 25th, 1875, and permanent officers elected on the 22d of the following March.

In 1878 S. W. Fowler, of Manistee, says, in effect: The Risdon plum orchard, in this city, covering about two acres, yields annually from \$400 to \$500 worth of plums. A man a few miles north of the city sold the plums from a single tree that season for \$36. This may be exceptional, but the yield of ordinary trees, in ordinary seasons, is worth from \$5 to \$15. Pears and other fruits also do well. Home grown peaches, this season, have sold from wagons in our streets at \$1.25 per bushel, till the demand was more than supplied, although this year is regarded as an off year for peaches and apples. Small fruits are abundantly successful and the quality unsurpassed. At Bear Lake, S. Rice realized \$320 from less than an acre of strawberries, Charles Hurd, from two acres of strawberries, realized \$640.

The culture of grapes is only beginning to attract attention, but the prospect is promising.

The report of the Manistee Horticultural Society for 1883 was mainly comprised in an interesting and useful paper on "Flowering Shrubs," by Edwin Russell.

In "A Brief of Horticulture in Michigan," J. V. P. Mukantz, secretary of the Manistee Horticultural Society, says the crops of peaches, though yet small, have commanded excellent prices. E. G. Filer is the largest grower. His orchards are on sandy soil.

Wm. Probert, in the northern part of the county, is on sandy loam. He considers peaches to be the most profitable crop he raises.

In 1868 to '70 several orchards of five to ten acres each were planted, but a subsequent intensely severe winter killed the trees and subdued the "peach fever."

Lands adapted to peach growing are plenty at from \$4 to \$10 per acre.

Edwin Russell says of grapes and grape growing: In our short, cool summers only the earlier varieties are sure to ripen, such as Tallman, Janesville, Concord, Delaware and Massasoit. Mildew is rarely troublesome.

App M. Smith says: Early Richmond is the standard cherry. Strawberries yield wonderfully and are of the highest quality. Raspberries, blackberries and gooseberries are abundantly successful.

Moses Hurlburt says plum culture is eminently successful under good cultivation, although the curculio is becoming troublesome.

Contributions to the State exhibit at the New Orleans Cotton Centennial Exposition, during the winter of 1883 and '84, were made by M. Hurlburt, J. E. Cady, S. Rice, Albert Erb, George R. Pierce and J. McDiarmid, and in most, if not all cases, the entries to be made were prescribed, but the failure of the management to provide the promised "cold storage," resulted in so great a loss of specimens that when the time for their exhibition arrived many, especially of the larger entries prescribed, had become no longer possible, and those in charge were compelled to exercise their own discretion, in making such entries as were yet practicable.

Upon the entries made premiums were awarded in Manistee county:—

To J. McDiarmid, Bear Lake, \$5.00 for best plate of Bailey Sweet; to S. Rice, Bear Lake, \$5.00 for best plate of Rhode Island Greening.

According to the census of 1884, Manistee county had of apple orchards 1,219 acres, 27,743 bearing trees, yielding, in 1883, 5,372 bushels of fruit.

Peach orchards, 27 acres, 1,325 bearing trees, yielding in 1883, 479 bushels of fruit.

The value of orchards products of all kinds sold or consumed in 1883 was \$10,246.00.

Vineyards, 3 acres: grapes sold in 1883, 500 pounds.
wine made in 1883, 100 gallons.

Nurseries, none.

Market garden products sold in 1883, \$6,819.00.

ALCONA COUNTY.

This county was set off as Negwegon by an act of the Legislature, approved April 1st, 1840. The name was changed to Alcona at or prior to the date of organization.

It was organized in pursuance of an act of the Legislature, approved March 12th, 1869, which provided for the perfecting of its organization on or before the 15th of April, 1869.

The county seat is Harrisville.

Secretary C. P. Reynolds, of the Alcona County Agricultural Society, in a contribution to the "History of Michigan Horticulture" (vol. 10, p. 217) says: "Experience indicates that Red Astrachan, Wagener and Northern Spy are successful, and that Oldenburgh also gives promise of success. The curculio does not yet attack the plum, which is being planted quite liberally. The Concord grape ripens, and the improved small fruits are being slowly introduced." He adds:—

"We have no horticultural society organized, but the fruit interest is encouraged by the agricultural society organized six years ago, and several good exhibits of apples, pears and plums have been made at the fairs of the society."

The following communication from Mr. Reynolds gives some account of the first settlement, and of the agricultural and horticultural development of the county:—

Alcona county properly belongs to that group of newly-settled territory known as northern Michigan. It should not be confounded with the north peninsula, for it has none of the features of that more northerly land of ice and snow, but rather that part of northeast Michigan lying on the west shore of Lake Huron. Its more particular location is about half way between Bay City and Mackinaw, about 198 miles north of Detroit and 100 miles from Bay City.

Alcona county has topographical features that are peculiar to itself, and quite different from the other shore counties that lie either north or south of it. The most prominent general feature that distinguishes it from all the others are the high banks that border the lake shore on the east. These bluffs are from ten to fifty feet from the water, and are noticeable from passing boats, especially in midsummer, when they are crowned with grass and trees.

This greenness presents a pleasing change from the low, sandy, desolate appearance of the dry cedars that fringe the shores above and below it. Another noticeable distinction is the marked difference in its forest trees. Instead of those dreary dry cedars, here are the sugar maples, the oak, the glossy hemlock, and towering above them is the majestic white pine, the monarch of its forests. The eastern side of the county has a breadth of four townships that border the west shore of Lake Huron, and have a rough, hilly formation, with numerous gulches that carry off the surplus waters to the lake: but the westerly townships are undulating or rolling lands, with large tracts of level land, with heavy clay soils, such as would please the eye of a farmer.

The county has a great variety of soils; the eastern range, adjoining the lake, are of a peculiarly marked alluvial character, that indicate the washings of the lake: apparently the lake has gradually receded from its shore, leaving strata of clay, gravel and sand, with occasional ridges of cobble stone. Another marked peculiarity of the soil

is that it seems to be good all the way down. The writer dug a well that was about twenty feet in depth, which passed through several strata of sand, gravel and clay, and the bottom earth was thrown in heaps, where it was frozen. In the spring potatoes were planted without removing the heaps, which proved equally good as those planted in other portions of the garden, and quite as productive.

The four tiers of townships lying west of the front are more varied in their conformation and productions of forest trees than the front; they have broader belts of pine, intermixed with the maple and hemlock, with cedar in the valleys and bordering on the numerous small lakes. The western tier of townships, in the vicinity of the Au Sable river, contain what are known as the Plains. These were evidently once pine-bearing lands, but were burned again and again, until everything was swept away, not even the stumps remaining.

They are usually covered with a growth of black pine, a stunted, worthless variety of no commercial value, and usually interspersed with the grub oak, which is peculiar to most of the State. A belt of these burned lands, or plains, extends across most of the northern counties of northeast Michigan, running in a southerly direction across Alcona county, where it is believed to contain thousands of acres of cleared, arable land, which is adapted to successful farming. Most of the Agricultural College lands were selected from these plains that were adjacent to the hard wood, and therefore supposed to be superior. If our Agricultural College would expend less for developing sorghum, and more for the test of the agricultural value of these lands, by locating a test farm upon them at the expense of the State, and thus bring them into the market, there would be less complaint about insufficient appropriations, besides adding to the taxable property of those townships in which they are located, which would enable the settlers therein to make better roads and build more school-houses.

The State has a wealth of lands that keep the people poor and add nothing to the wealth of the State. They are a drag to the new townships and a curse to the counties.

The first settlers of Alcona, as well as most other northern counties bordering on the lake, were fishermen. The history may be properly divided into three epochs—fishing, lumbering and farming.

The fishermen learned the value of the pine trees in making their fish barrels: the lumberman found its value in eastern markets: but the farmer found the value of the soil much as mines of valuable mineral are found—accidentally.

The first fruit trees were planted for the same reason that Adam's "Garden of Eden" was planted—for his own use and that of his family.

The first fruit trees planted on the west shore of Lake Huron were planted at Springport, or South Harrisville, 40 years ago (in 1846), by S. M. Holden, the pioneer of Alcona county. (See history of Alcona Co.) They were brought from Birmingham Oakland Co., and consisted of 30 apples and some plums and cherries. On a recent visit to the place of Isaac Wilson, who now occupies the homestead of Mr. Holden, at Springport, only four of those old trees were found, on the shore of the lake, a few rods south of J. VanBuskirk's saw-mill, and still in full bearing. Mr. Wilson, who is also one of the pioneers, has kindly cared for those aged trees and the four are now in full bearing, and are of the following choice varieties, viz.: 1 R. I. Greening: fruit perfect and tree loaded. 1 Early Harvest: fruit perfect, and in abundance. 1 Canada Red: fruit very fine and the tree full of fruit, second year of bearing. 1 "Fameuse," or Snow apple, in full bearing, and has always been so, being very hardy and the fruit always good.

The next trees planted in Alcona county were brought from West Bloomfield, Ontario

Co., N. Y., in 1856, by L. O. Harris, and sold to Wm. Beaver, Robert Beaver, Chas. Briggs, Geo. H. Blush, Isaac Wilson, Joseph Fisher, Anial Fox and Robert Foster, who planted orchards. From these orchards much fine fruit has been gathered, which has taken prizes at State, district and county fairs, of which Matthew O'Neal has probably taken the most, from that wonderful apple tree, the 20 oz. Pippin, the fruit from which was the wonder at State fair in Detroit 1878. That tree, with others, was taken from the orchard of Anial Fox, another of the pioneers of our county, who sold his orchard to Mr. O'Neal and Gilbert VanBuren, who transplanted them to their own places. Our farmers could learn a lesson on fruits adapted to the climate of Alcona county by noticing those old pioneer apple trees. They might learn a lesson, also, from some of the pioneers.

Isaac Wilson was the son of Peter Wilson and Phebe Dibble, his widow, who died June 1, 1886, at Plainfield, Kent Co., at the advanced age of 107 years. Her father, Peter Dibble, died at Colchester, Delaware Co., N. Y., at the age of 108 years. Mr. Wilson is 78 years old and one of the last of Alcona county's pioneers, and is still hale and hearty.

There have been no nurseries planted in Alcona county. The irrepressible tree agent still roams at large.

There are no fruits marketed excepting wild berries, such as the whortleberry, red raspberry, and blackberry. It is estimated (grossly) that there are enough blackberries, if picked and marketed, in Alcona county to-day to pay the National debt and the pension claims in full.

The berries are transported by lake and marketed at Detroit, Cleveland, Toledo, and Cincinnati, and constitute the main supply for home use.

There are no other old trees planted in our county besides those mentioned in the preceding account.

For ornamental trees we use the sugar and soft maple, the mountain ash, and for evergreens the abor vitae, hemlock, and fir balsam, which are abundant in the county and have no superiors.

Our cemeteries and parks are planted with sugar maples. Our farmers are also planting along the roads, under the statute in such cases made and provided.

The Wagener apple flourishes on our sand ridges, and is especially productive this season, the specimens being the largest I have ever yet seen, much larger and finer than when it was originated, at Penn Yan, Yates county, N. Y., where I have seen the original tree.

The plum is evidently at home in Alcona county, for there is no curculio nor appearance of black rot.

The sour cherries are successful. The Concord grape matures, and strawberries never fail. The plains are thatched with them.

C. P. REYNOLDS.

The census of 1884 shows that this county had of

Apple orchards, 171 acres, 1,282 bearing trees, yielding in 1883, 91 bushels of fruit.

Peach orchards, none.

The value of orchard products of all kinds, sold or consumed in 1883, was \$52.00.

Vineyards, none.

Nurseries, none.

Market garden products sold in 1883, \$650.00.

The contour map of the State shows elevations in the county, varying from two hundred feet in the east and center to six hundred feet or more in the west.

OSCODA COUNTY.

Oscoda county was set off by act of the Legislature approved April 1st, 1840.

The county seat is at Mio.

The county lies in the middle portion of the basin of Au Sable river. A few of the southern affluents of Thunder Bay river, however, rise in the northeastern part of the county. The elevations which separate the basin of the Au Sable from the water-shed of the Saginaw at the south and from the Thunder Bay river at the north are partially in this county, and rise to a height of as much as seven hundred feet above the level of Lake Huron, the general levels varying between three hundred and seven hundred feet above the lake.

Few particulars are known respecting the settlement of the county or the condition of its agriculture or its horticulture, both of which are believed to be yet in an incipient condition, as shown by the census of 1884, according to which, at that date, this county had of apple orchards, 66 acres, and no bearing trees.

Peach orchards, none, and only a single bearing tree.

Vineyards, none.

Nurseries, 10 acres; products sold in 1883, \$10.00.

Market garden products sold in 1883, none.

The outlets for the business of the county at the present time are by way of the Jackson, Lansing & Saginaw railroad, which passes through the western part of the next county at the west, and by water down the Au Sable river to Lake Huron.

CRAWFORD COUNTY.

This was laid off as Shawono county by an act of the Legislature approved April 1st, 1840.

Section 8 of an act approved March 8th, 1843, provides that "The name of the county of Shawono, as now organized by law, is hereby changed to that of Crawford." It continued unorganized and was attached to Kalkaska county for judicial and municipal purposes until 1871.

The county seat is at Grayling, a village on the Jackson, Lansing and Saginaw railroad, at the point where it crosses the main branch of the Au Sable river.

It occupies the head of the valley of that river. The head waters of the Manistee also take their rise in the west tier of townships.

This county, therefore, occupies a portion of the central plateau of the

State. Its elevation above the waters of the great lakes varies from six hundred to one thousand feet.

Little is believed to have been done toward the settlement and improvement of the county prior to the opening of the railroad. According to the Detroit Tribune of May 12th, 1887, a Crawford County Agricultural Society was organized during the early part of that year.

The census of 1884 indicates that the work of development has but fairly commenced. Of apple orchards it had but 23 acres, 43 bearing trees, yielding in 1883, 10 bushels of fruit.

Of peach orchards, none, 6 bearing trees, but without yield in 1883.

The value of orchard products of all kinds, sold or consumed in 1883, was \$4.00.

Vineyards, none.

Nurseries, none.

Market garden products sold in 1883, \$1,452.00.

KALKASKA COUNTY.

This was laid off and named Wabassee county by Legislative enactment, approved April 1st, 1840. The name was changed to Kalkaska by an act approved March 8th, 1843. The county was organized in pursuance of an act approved January 27th, 1871.

The county seat is at Kalkaska, a village on the line of the Grand Rapids and Indiana Railroad, which passes through the western and northwestern portion of the county.

The county lies wholly upon the western slope of the State. The Manistee river passes through its eastern and southern parts, on its way to Lake Michigan. Boardman river traverses the central and western portions to the western arm of Grand Traverse bay; and Rapid river, after watering the northern towns, enters Torch river, near the foot of Torch lake. The elevation of the county above the waters of Lake Michigan varies from two hundred to seven hundred feet.

The county contains much excellent land, and since the construction of the Grand Rapids and Indiana Railroad supplied a convenient outlet, both agriculture and horticulture have developed quite rapidly, although the county as a whole is yet decidedly new, and much more time is needful to develop large results, especially those of a horticultural character.

In 1886 James Greacen, judge of probate in this county, and also correspondent of the Department of Agriculture at Washington, states in substance as follows:—

"Vegetables of all kinds are very successful, excepting only tomatoes, which require a longer season in which to ripen. Orchard culture has hardly been successful so far. Some persons have replanted two or three times. Trees, after doing nicely for several years, would die out during an unusually severe winter. Often the cause seems to be too thorough or too late cultivation, with a consequent late growth, and wood but imperfectly matured for the winter."

In the spring of 1880 he (Mr. Greacen) planted nine hundred pear trees.

During the first three years he lost a few trees, as he believes from over cultivation. He then seeded down the orchard, only cultivating enough to prevent the trees becoming "sod bound;" and he now has as promising a young orchard as he ever saw. Some of the trees are already fruiting.

Most varieties of apples and crabs prove satisfactory, except the Wagener. There are few troublesome insects, and fruits are very fair and beautiful. Plums and pears are successful with proper culture.

Cherries do well, as do currants, raspberries, strawberries, and all the small fruits. Peaches are a failure, and grapes nearly so.

The earliest improvements in the county date back only about fourteen years, at which time the first orchards were planted, many of which are entirely successful.

Of ornamental trees he commends the mountain ash (not those taken from the forest), also hard or sugar maple and elm.

The census of 1884 shows the county to have had, of

Apple orchards, 550 acres, 4,539 bearing trees, yielding in 1883, 1,510 bushels of fruit.

Peach orchards, 6 acres, 136 bearing trees, yielding in 1883, 24 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$1,597.00.

Vineyards, 76 acres: grapes sold in 1883, none.

wine made in 1883, none.

Nurseries one acre; products sold in 1883, \$40.00.

Market garden products sold in 1883, \$1,048.00.

GRAND TRAVERSE COUNTY.

This county was laid off and named Omequa, by act of the Legislature, approved April 1st, 1840. The name was changed to Grand Traverse by a subsequent act, approved April 7th, 1851, which is also the date of the approval of the act under which the organization of the county was completed, by the election of the proper officers, on the first Monday in August, 1851.

The county seat is at Traverse City, which was first settled early in June, 1847. (Grand Traverse Herald.)

In May, 1839, Rev. John Fleming and Rev. Peter Dougherty, missionaries of the Presbyterian board, who had spent the previous winter at Mackinac, came to Grand Traverse bay and landed at what has since been known as Old Mission. A conference with the Indians resulted in the removal of both Indians and missionaries across the east arm of the bay, to what is now known as Elk Rapids, where a location was selected and a dwelling and school-house built.

Rev. Mr. Fleming was soon after called away, by the death of his wife at Mackinac, and did not return. About the 20th of June United States Indian Agent Henry R. Schoolcraft, visited the mission, and established there a Mr. Isaac George, as blacksmith, carpenter and farmer, as required by a treaty with the Indians.

Soon after the departure of Schoolcraft Mr. Dougherty was induced to recross the arm of the bay, and to finally establish himself at Old Mission harbor, where he had first landed. The next autumn John Johnston arrived there as Indian farmer, bringing with him a yoke of oxen. Other persons were from time to time added to the little party.

In 1847 the present site of Traverse City was purchased of the government by Captain Boardman, of Illinois, who supplied his son with means to locate and build a saw-mill thereon, and a few days after his arrival, on the 20th of June, a vessel arrived with supplies, and on July 5th she made her second appearance with additional settlers, both men and women.

In 1850 a number of men, among them John Swaney, Martin Wait, J. M. Pratt, E. P. Ladd and Wm. R. Stone, settled at Old Mission as farmers, some of them being still residents there.

The first planting of fruit trees was done by J. M. Pratt, at Old Mission, in 1851.

In the spring of 1851 the Traverse City mill and lands passed into the hands of the present proprietors, Hannah, Lay & Co.

The peculiar adaptation of the region for agricultural pursuits, and for fruit culture especially, soon came to be understood, or at least dimly perceived. One of the earliest experimenters in this direction was Perry Hannah, whose extensive orchard of forty acres, planted at an early day, doubtless aided greatly in directing attention to the subject.

Judge Ramsdell, also, who became a resident at Traverse City about 1858, planted, and is still planting, fruits extensively, and with eminent success. His plantations embrace the entire circle of northern fruits, and his experiments have been of great value as a guide to subsequent planters.

At Old Mission, W. Golden, H. R. Haight and E. P. Ladd planted apple orchards in 1861, for commercial purposes, consisting chiefly of Golden Russett, Rhode Island Greening, Baldwin and Northern Spy.

The largest orchard in this county, if not, in fact, the largest in the State, was planted by George Parmelee in 1869, covering one hundred and twenty acres. It consists mostly of apples, but includes also a few pears and cherries. It is now owned by O. H. Ellis. The trees are not yet generally in good condition, except those standing on low land.

Another notable plantation is that of Hon. H. G. Reynolds, now in charge of I. B. Tompkins. It is a young orchard, just beginning to bear, and is proving to be very profitable.

The town of Peninsula, especially, seems to be admirably adapted to the growing of apples, pears, plums and cherries. The black knot on plum trees and the blight in pear trees have been so far almost unknown.

Peaches have proved less profitable. The trees have been healthy and the yellows is unknown, but they have suffered seriously from cold winters, possibly from too late cultivation. Some fruit growers are planting peach trees, with the purpose of so arranging and directing the growth of the roots that they may be laid down and covered in winter. The experiment, however, is not yet solved.

The curculio, the premature loss of foliage, and the rotting of the fruit of the plum tree have been hitherto unknown in this region. The trees have been healthy and exceedingly productive, and the fruit superior in size and quality, and for these reasons it has been extensively planted and highly profitable.

Judge Ramsdell, of Traverse City, at one time had as many as seven hundred, or perhaps one thousand, trees, which yielded immense crops—too much, perhaps, for their future prosperity.

Peaches are also grown with considerable success at Judge Ramsdell's, and perhaps at other places, on quite elevated, and to some extent sheltered, grounds.

The grape has also been grown here with a good degree of success, the shortness of the season being, to some extent, compensated by the greater length of the days, as well as by the greater exemption from autumnal frosts, due to the proximity of Grand Traverse bay and Lake Michigan.

A nursery was established about the year 1866 by Mr. Joseph Archer, and another two or three years later by Tuttle and Savage, and still later yet another by C. T. Avery, but all have been discontinued.

The greatest obstacle to the raising of nursery stock here seems to be that the deep snows of winter are very liable to break down the trunks and branches of young trees.

There are several seedling apple trees in Peninsula of unknown origin, probably fully one hundred years old, but still healthy and productive. The fruit of some of them is of excellent quality.

George Roberts, of Old Mission, has a fine grove, mostly of sugar maples, covering about six acres. Many farmers also have planted trees along the highways, but there is a lamentable need of attention to the beautifying of the surroundings of school-houses, churches and cemeteries.

The elevation of the lands on the peninsula varies from one hundred to perhaps three hundred feet above the waters of the bay.

The delightful summer climate of this region, the purity of the water, the great diversity of surface, and the conveniences for pleasant excursions over its extensive land-locked waters, are attracting an unusually increased attention to it, as one of the most desirable of summer resorts for needed rest and recreation.

For most of the particulars above mentioned the writer is indebted to a committee of the Peninsula Farmers' Club, consisting of J. M. Pratt and E. P. and E. O. Ladd.

With the exception of the year 1856 the peach trees planted at Old Mission by Rev. Peter Dougherty did not fail to bear fruit for nineteen years.

In 1865 the first killing frost on the peninsula occurred as late as December 2d, in 1866 on November 15th, and in 1867 on November 18th.

Under date of January, 1855, John S. Dixon foreshadows the future of this region as follows: "All experience goes to prove that this will be a great fruit country. The Indian apple and peach trees, though few in number, bear well every year. As for wild raspberries and blackberries, both as to size and flavor, there is absolutely no end. They serve all the inhabitants and millions of pigeons for several months."

The table lands of this county rise from two hundred to four and perhaps five hundred feet above Grand Traverse bay.

The late Sanford Howard, at the time secretary of the State Board of Agriculture, who visited this region in 1867, says: "On the grounds of Mr. Marshall, near Old Mission, there are fine vines of the Catawba, Isabella, Concord, Delaware, Iona, etc., and the Catawba has not failed to ripen perfectly for the last four years."

W. S. Hubbell, president of the Benzie Agricultural Society, says: "Judge

Ramsdell, of Traverse City, fruited the Diana, Isabella, and Delaware, all ripening perfectly. On a four years old Diana vine he had seventy-five full bunches. He has, this fall (1867), planted one hundred Concords, one hundred Ionas, one hundred Delawares and fifty Isabellas. He experimented with some of these last year and they made a growth of from four to eight feet."

In 1867 the Grand Traverse Union Agricultural Society was organized to include Grand Traverse, Benzie, Leelanaw, Antrim, Charlevoix and Wexford counties.

In 1869 the report of this society says: "In fruits the display would have done credit to any part of the country. Apples of all the popular winter varieties, large and perfectly free from blemish, though of course not so ripe as the same kinds grown farther south, but ripe enough to keep well and to be of first-rate quality next spring, when the apples of more southern districts will have lost flavor or commenced to decay. Handsome specimens of pears, of the Bartlett, Flemish Beauty, Louise Bonne of Jersey, Diel, and other varieties were shown.

"In peaches the display was splendid. We have never seen its equal in the month of October. It seemed strange to see here Cooledge, Early Crawford, and other kinds which we have been accustomed to find ripe in August. They are, however, as all agree, two weeks later than usual. Still they were not dry and mealy, but juicy and of good quality, though, like peaches in some other sections, not quite as high flavored as in warmer and drier seasons.

"Plums of several varieties were exhibited. Specimens of a large reddish purple variety, perhaps the Red Diaper or French Diapree Rouge, attracted great attention. This species of fruit, thus far, flourishes remarkably in this section.

"Grapes were not numerous, but there were some good specimens. They were all grown in the open air, with the exception of two or three kinds produced under glass, by Lieutenant-Governor Bates. Judge Ramsdell showed the Iona, Isabella, Adirondack, Delaware, and some of Rogers' Hybrids, from his own grounds, well ripened and of good quality.

"There was a large show of vegetables, comprising almost every kind cultivated in any part of the State. Cabbages of greater size than we had before seen, this season, were brought out. Several heads from the farm of the Hon. D. C. Leach, averaged thirty pounds each. We have never seen finer cauliflowers than were shown by Judge Ramsdell and one or two other exhibitors whose names we did not learn.

"The floral display was interesting from the great number of annuals in fine bloom, indicating that no damaging frosts had yet occurred in the gardens."

In 1872 (Hort. Trans. p. 608) the late Geo. Parmelee says of this county: "Probably three-fourths of the acreage in orchards is in apples. Next in order will come peaches, then pears, then cherries and plums, with a few quinces and apricots. Perhaps there are as many acres of grapes as of plums or cherries."

On October 6th, 1873, the orchard committee of the State Pomological Society, in visiting and examining the plantation of Judge Ramsdell, at Traverse City, speak of its location as follows: "The first thing on a bright morning was to go up about three hundred and fifty or four hundred feet above

the level of the bay and take a survey of the country. We could easily see Northport, thirty-two miles away, and beyond, the open water. The autumn foliage of maples, beeches, poplars, ashes, elms, pines and spruces spread all over the valleys and rolling hills, presented a picture grand and beautiful. Such a picture we never expected to see in Michigan."

The examinations of the committee resulted in the award of a first premium to Judge Ramsdell, for a Delaware vineyard.

The committee speak as follows of a group of old apple trees upon the premises of George Parmelee, at Old Mission: "There are quite a number of old apple trees raised by the Indians. These are nearly all sound and healthy, but insects and weeds are there, and are beginning to show their capacity for increasing."

The Grand Traverse Union Agricultural Society held its annual fair at Traverse City on the 8th to 10th days of October, 1873, at which the officers and several members of the State Pomological Society were present, by invitation, as guests. The exhibit of fruits and flowers was excellent, particularly the displays of fruits from Grand Traverse, Benzie and Leelanaw counties. The first premium was awarded to the Grand Traverse exhibit.

Sessions of the State Pomological Society were held at evening, in a hall provided for the purpose, and were largely attended, and the occasion throughout was one of both pleasure and profit. During one of the days a free excursion was tendered to the Pomological Society, by steamer, to Old Mission.

The discussions of the Old Mission Farmers' Club in 1874, indicate a settled and unanimous conclusion that apples are the most satisfactory and profitable crop grown on the peninsula.

At the session of the Peninsular Farmers' Club on March 16th, 1874, there were twenty varieties of apples exhibited.

After testing these, a vote was taken to determine the best flavored variety; Golden Russet receiving 15 votes; Esopus Spitzenburg, 7; Grimes' Golden, 4; Rhode Island Greening, 3; Wagener, 3; Belmont, 1; Lady apple, 1.

Thomas Lyman, for fifteen years a fruit dealer at Chicago, named Rhode Island Greening, Esopus Spitzenburg, Baldwin, Northern Spy and Roxbury Russet as the five varieties most popular in that market.

Each member being requested to name the three varieties he esteemed best for dessert purposes:

Golden Russet	was the first choice of	11,	second	5,	third	6.
Grimes' Golden	"	3	"	3	"	9.
Esopus Spitzenburg	"	5	"	7	"	2.
Belmont	"	1	"	0	"	0.
Swaar	"	1	"	0	"	1.
Lady apple	"	1	"	0	"	0.
Roxbury Russet	"	1	"	1	"	0.
Wagener	"	1	"	4	"	0.
Rhode Island Greening	"	0	"	3	"	5.
Northern Spy	"	0	"	1	"	0.

The orchard committee of the State Pomological Society in 1874, awarded premiums to residents of Grand Traverse county as follows:

To Wm. Marshall, Old Mission, bearing apple orchard, 2d premium.

To Geo. Parmelee, Old Mission, apple orchard for profit, 1st premium.

To A. K. Montague, Traverse City, apple orchard for profit, 2d premium.
 To John Alliston, Old Mission, apple orchard 25 or more trees, 1st premium.
 To Reynolds & Tracy, Old Mission, specimen apple orchard, 1st premium.
 To Geo. Parmelee, Old Mission, ten acres pear orchard, 1st premium.
 To J. B. Burney, Old Mission, plum orchard in bearing, 1st premium.
 To E. H. McCallum, Old Mission, plum orchard 4 years old, 2d premium.
 To Geo. Parmelee, Old Mission, Elton cherry orchard, 1st premium.
 To Geo. Parmelee, Old Mission, Eng. Morello orchard, 2d premium.
 To Geo. Parmelee, Old Mission, $\frac{1}{2}$ acres red raspberries, 1st premium.

In May, 1876, Geo. Parmelee of Old Mission contributed a collection of apples, the growth of 1875, to the opening display of the Michigan Pomological Society at the Centennial Exposition at Philadelphia.

At the general display of northern fruits at that exposition in September and October, contributions were furnished by J. G. Ramsdell of Traverse City, George Parmelee, W. W. Tracy, William Marshall, H. K. Brinkman and others of Old Mission.

The Centennial judges of pomology reported as follows, so far as this county is concerned:

“Peninsular Farmers’ Club of Grand Traverse county, Michigan: Peaches, apples, and pears. Of the last two we have to speak in terms of the highest praise. The Bartlett pears were not as large as are often grown, but were of a clear lemon color, with brilliant scarlet on the sunny side and with a delicious aroma. The Flemish Beauty pears were very highly colored, and measured ten and three-quarters and eleven and one-half inches. Among the apples, Porter measured ten and three quarters inches by eleven inches around, Spice Sweet, twelve inches; Oldenburgh, eleven and one-half inches; Red Astrachan, ten and three-quarters inches, and very beautiful. Taking the whole collection, it was very meritorious.”

In 1877 premiums were awarded by the orchard committee:

To Geo. Parmelee, Old Mission, for pear orchard, 1st premium.

To J. G. Ramsdell, Traverse City, for bearing plum orchard, 1st premium.

To Geo. Parmelee, Old Mission, for bearing cherry orchard, 1st premium.

To Reynolds & Tracy, Old Mission, for plat of raspberries, 1st premium.

The committee in their report commend the pear orchard of Judge Ramsdell, consisting of forty trees, planted from three to six years since, consisting of White Doyenne, Angouleme, Buffum, Seckel, Bartlett, Flemish Beauty and Louise Bonne, of Jersey.

The pear orchard of Geo. Parmelee consisted of eleven hundred trees, consisting of Bartlett, Flemish Beauty, Anjou, Sheldon, Lucrative and a few each of White Doyenne, Summer Doyenne, Clapp’s Favorite, Winkfield, Lawrence and Easter. The committee commended it as “The finest pear orchard they have seen in Michigan.”

Reynolds & Tracy, of Old Mission, have pear orchards containing about twelve hundred trees. Many of them set two or more years ago. They have, so far, found some of the varieties hardy in the following proportions: Clapp’s Favorite, 95 per cent; Flemish Beauty, 80 per cent; Bartlett, 70 per cent; Howell, 70 per cent; Clairegeau, 70 per cent; Winter Nelis, double worked, 20 per cent; Bosc, double worked, 33 per cent; Giffard, 35 per cent; Madelaine, 5 per cent.

The plum orchard of J. G. Ramsdell contains seven hundred trees, all on plum stocks. Two hundred have been planted six years; two hundred four

years, and three hundred three years. He fights the curculio by the jarring process. From his experience he would now plant twenty Washington, twenty Jefferson, ten Lawrence, seventeen Bradshaw, seventeen Smith's Orleans, sixteen Lombard in one hundred, thus including about equal quantities of yellow and purple varieties.

From the two hundred oldest trees he took, in 1874, about fifty bushels of plums; in 1875, seventy-five bushels; this year (1877) about one hundred and fifty bushels, from these two hundred trees.

On a farm near Old Mission the committee found three sound, healthy plum trees, which, they were told, had been standing seventeen years. During part of this time, however, the crops had been ruined by the curculio.

The orchard committee also noticed and commended lawn and ornamental grounds of Messrs. Reynolds and Tracy as better than they had expected to see so far north.

The report on the vineyard of Judge Ramsdell says the location is high, containing two and one-half acres, sloping eastward. The varieties are Iona, Wilder, Delaware, Concord and Agawam. The owner considered Iona worth fifteen cents per pound to manufacture into wine. Wilder outranks all others as a market grape, and is also a good keeper.

The premium cherry orchard of George Parmelee contains two hundred bearing trees, consisting mainly of Mayduke, English Morello, Elton, Big-arreau and Black Tartarian. The English Morellos were just being gathered when the committee called there, yielding a bushel to the tree. The picking was done by girls, who cut the stems in two with scissors, picking eighty to ninety quarts each per day.

The cherry orchard of Judge Ramsdell contains one hundred and ten trees, two years planted, of the following varieties: 30 Early Richmond, 20 Black Tartarian, 20 Rockport, 10 Mayduke, 10 Louis Phillippe, 5 Governor Wood, 5 Napoleon, 5 Reine Hortense.

The peach orchard of Judge Ramsdell contains one hundred trees of Hale's Early, standing twelve and one-half by sixteen feet apart. Hale's Early does not rot here. He had tested several varieties, and would plant only those ripening before September. He would, at present, plant only Hale's Early, which does better here than farther south. This orchard was entered, not so much with the expectation of a premium, as to draw attention to what can be done with this fruit in that northern country.

At the summer meeting of the State Horticultural Society, held at Benton Harbor in June, 1881, Judge Ramsdell said:—

“At my place the thermometer reached—14° (during the winter of 1881-'2); on the peninsula only—10°. There was no damage done to my orchard, except plums. Washington and Jefferson suffered most. I lost fifty trees out of seven hundred and fifty. They all bore heavily last year, and rotted very badly; seven hundred out of one thousand bushels were lost by rot. Six years ago my orchard went through a temperature of—26° and came out all right. The whole matter depends on how the trees go into the winter. Peaches and apples, with us, are all promising. The less said about my grapevines the better. I have abandoned grape culture, and ought to have rooted out my vines last year, but was too tender-hearted. The truth is, the little insects known as thrips have met me and I am theirs. They live on grapevines, pear and maple leaves, American ivy, and will, to my certain knowledge, thrive upon blue grass. Under a scourge like this I gave up, and the

vineyard that has been my pride will be given up, and I shall abandon the business, hoping that the enemy will go to fresh fields, when, perhaps, I can take advantage of his inattention and plant a few vines for my own use."

According to the census of 1884 Grand Traverse county had of apple orchards 2,661 acres, 51,999 bearing trees, yielding, in 1883, 23,502 bushels of fruit.

Peach orchards, 124 acres, 2,523 bearing trees, yielding, in 1883, 1,838 bushels of fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$29,453.00.

Vineyards, 6 acres: grapes sold in 1883, 140 pounds.
wine made in 1883, none.

Nurseries, 4 acres; products sold in 1883, \$325.00.

Market garden products sold in 1883, \$6,289.00.

BENZIE COUNTY.

Benzie county was taken from Leelanaw by act of the Legislature, approved February 27th, 1863, and was organized in pursuance of an act approved March 30th, 1869, which provided for the election of county officers on the first Monday in April, 1869.

The county seat was located at Frankfort by a special election held for that purpose on the first Monday in July, 1869, as provided in section four of the organizing act.

Aux Bec Seies is the French name of the principal river in the county. Americans corrupted the name to *Belsie*, which has been refined to Benzie as a name for the county.

The general elevation of the table lands of the county is from two hundred to four hundred feet above the level of Lake Michigan, and the drainage is through the Platte and Aux Bees Seies rivers. It seems probable that the latter stream, the corruption of the name of which has been applied to the county, was so designated on account of the narrowing of the stream at its mouth, or possibly from the tendency to form a bar at the entrance from the lake.

As early as 1867 W. S. Hubbell, president of the Benzie County Agricultural Society, reports to the State Board of Agriculture as follows:—

"Results in fruit culture through this section thus far are very encouraging. The peach crop this year was a full one, and strangers who attended the Benzie fair expressed the opinion that better specimens of their kind could not be shown in the State than were there to be seen. Plum trees bore very full, and the fruit was perfect. Apricots were grown by Dr. Walker of first quality. J. R. Barr exhibited very fine quinces. Isabella, Concord and Catawba grapes were exhibited in perfection."

In 1865 Professor Alexander Winchell characterizes the Grand Traverse region, including Benzie county, as "the most remarkable and most desirable section of country in the Northwest, and expressed the opinion that, as a fruit growing region, it was doubtful whether any other part of the United States could compete with it."

As early as 1847 there was a white man with an Indian wife residing at the mouth of Aux Bees Scies river, probably engaged in fishing, hunting and trapping.

The advanced colony of Congregationalists did not settle at Benzonia till October, 1858.

The following statements are in substance contributed by W. S. Hubbell and J. W. Van Deman, of Benzonia:—

The first settler in the township of Almira was John H. Heather, who entered a homestead January 1st, 1863. The township was named after the wife of A. J. Burrell.

Addison P. Wheelock and A. J. Burrell both entered homesteads in this township prior to May 16th of the same year.

Calvin Sinkletter planted the first orchard on his homestead entry, made June 4th, 1863. The orchards in this township are mostly small, and consist mainly of apples. Twenty-four homesteads were entered in the township during the year 1863.

The earliest settlers in Platt township were V. F. Thurson, L. R. Morgan and Jonas E. Hilmer, who each entered a homestead April 5th, 1864.

The best three orchards are owned by Mr. Peck, John Ash and N. Martin. Small fruits do well, but not much fruit besides apples is grown.

Andrew Grief, in the southwest part of the township, has a successful vineyard, and also some peaches; J. E. Hilmer also has a few plum trees.

In the township of Lake the first settler was Joseph Oliver, who purchased land on the bank of Lake Michigan, September 17th, 1859. The township is not much settled. The first plums in Benzie county are believed to have been raised on the farm of Hugh Lockhart (the old Oliver orchard). Robert Bancroft also has a fine orchard, also plum and peach trees.

Inland township was first settled by Daniel Sherman and J. McIntyre, who entered homesteads November 17th, 1863. The best orchard is that of Richard Reynolds, of about five acres; he has also pear and plum trees. A few other small apple orchards are doing well.

Homestead was first settled by E. E. Kirtland, who entered a homestead January 15th, 1863, and cut the first tree and built the first log house in the township. It contains about eighty acres of orcharding. The best four orchards are those of Morris Case, F. M. Walkley, James Case and Wm. Buchan. There are several other fine, but smaller orchards, mostly apples, with a few pears and plums, which are doing well.

Charles and John Bailey were the first settlers in Benzonia, in the autumn of 1858, their purpose being the establishment of a colony and a college, in the interest and under the control of the Congregational church. There are about two hundred and fifty acres of orcharding in the township, the first having been planted by Charles and John Bailey and J. B. Walker. The best seven orchards are now owned by Captain S. Small, consisting of eighteen acres of apples, pears and plums, and twelve acres of one and two years planted peaches; Wm. Pettet, eight acres; J. R. Barr, six acres; George Jones, four acres (the old Walker orchard); J. J. Hubbell, five acres, A. B. Adams, ten acres; and Charles Bourghans, ten acres.

The best fruit lands in the county are on the ridge of land between Crystal and Platt lakes, nicknamed Eden. A. B. Adams has raised peaches on his place here for eighteen successive years. There are, in the vicinity of Mr. Adams, twenty-five acres of mostly young peach orchard, as well as many other small ones, generally in good condition.

In Crystal Lake township, the earliest settler was Joseph Oliver, a hunter and fisherman, who purchased lands February 19th, 1857, and built a log house on the banks of Betsie lake, near the outlet. He was followed by Wm. Cogshell and L. A. Doughby, in 1859. There are now about two hundred acres of orcharding in the township. The best commercial orchards are those of D. C. Whitwood, of Detroit, twenty acres; A. G. Butler, forty acres; Dr. J. Voorhees, twenty acres; and H. M. Spicer, fifteen acres. There are many others of ten acres or less.

The first settlers in the township of Colfax were D. G. B. Morris and C. A. Carpenter, who made homestead entries on November 24th and 29th, 1865. There is little fruit grown in the township. L. Marble has a fine location for a cranberry plantation, which is little improved at present, but promises well for the future.

In the township of Weldon the earliest settler was A. T. Case, on May 4th, 1863, who has a small orchard, as have a few others. Apples only are grown.

Joyfield township was first settled by Amaziah Joy, from whom it was named. His settlement occurred July 11th, 1863, and that of Wm. Davis (colored) on July 23d. The finest orchards are those of J. and M. Spalding, A. Joy and Mrs. Parker.

Gilmore was probably the earliest settled township in the county, Joseph Robarge having located there on May 23d, 1856. John Greenwood also located land here in 1857. The high lands in this town are all good fruit lands. John Greenwood, Henry Cooper and Seth Bailey are successful fruit growers. There are a number of small orchards in the town, as well as pears and plums, all doing well.

In Blaine township, Harrison Averal became a settler, May 14th, 1859; Frank Martin, February 17th, 1863, and John Hunt, May 29th, 1863. The township has some good fruit lands. Among the best orchards are those of J. Goodrich, Orrin Blood (peaches), Rufus and Marshall Putney, Wm. Voorhees and F. R. Axtel. There are also other prosperous orchards.

The Benzie County Agricultural Society was organized June 5th, 1865. It has held an annual fair every year since, except in 1866. The exhibit of fruit at the first fair, in 1865, was small, being one peach. Last year (1885) there were entered four hundred and seventy plates of apples, thirty-seven of grapes, thirty-four of pears, thirteen of plums, four of peaches, and six of quinces—a total of five hundred and sixty-four plates of fruits, while the entries in all departments of the fair numbered about one thousand.

On October 8th to 10th, 1875, the fifth annual fair of the Grand Traverse Union Agricultural Society, and when the State Pomological Society was in attendance, Benzie county exhibited forty-eight varieties of apples, nine of pears, eight of peaches, twelve of plums, four of grapes, seven of raspberries (artificially preserved) and two of strawberries (artificially preserved).

This collection competed for premiums against a similar collection from Grand Traverse county. The committee, in awarding the premiums to the Grand Traverse collection, remarked:—

“These two collections compete very evenly so far as the quality of the specimens is concerned, and moreover, they both embrace the great mass of our best known and most desirable varieties, so that the real difference in value is less than would at first sight appear.”

In 1880, in *History of Michigan Horticulture*, J. J. Hubbell says: The Benzie County Agricultural Society has given much attention to horticulture.

It has held regular annual fairs since 1863, and the most prominent part of its exhibitions has been the show of fruit.

The Benzie County Horticultural Society was organized as auxiliary to the State Horticultural Society on February 8th, 1881. Its annual report for that year gives the crop of fruit grown in the county in 1880 as follows: Apples, 8,597 bushels; peaches, 1,140 bushels; pears, 104 bushels; plums, 650 bushels; cherries, 125 bushels. Value about \$10,000. The value of orchard products reported for Benzie county in census of 1870 was \$60.00.

At its meeting in January, 1882, there was a good display of Golden Russet, Roxbury Russet, Rhode Island Greening, Rawle's Janet and Ben Davis apples. C. H. Parker showed excellent specimens of Salem, Iona, Agawam, Perkins and Isabella grapes. The meeting was a successful one.

A floral display, in competition for prizes offered, was held at the August meeting. Premiums for fruits were also offered at the November meeting.

1883 was not a favorable year for fruit; yet the society held regular monthly meetings. Complaints were made of the destruction of fruit buds by the partridge or ruffed grouse, and of the browsing of young trees and the pulling out of grafts by deer.

The society held nine meetings during 1884. Others were broken up by storms or other causes.

On June 24th and 25th, 1885, the State Horticultural Society held its summer meeting at Frankfort, with a carriage excursion on the second day along the delightful shores of Crystal lake to Benzonia and its vicinity. A full account of the meeting occurs in the general history. The failure of the fruit crop had a depressing effect upon the society, which greatly discouraged attendance at its meetings during the year.

In 1886 the September meeting of the society was signalized by the presence of H. E. Van Deman, pomologist of the agricultural department, Washington, D. C. (a brother of J. W. Van Deman, secretary of this society), who took occasion to say: "He had seen in this State, during the month of September, principally from the Grand Traverse region and the fruit belt on the east shore of Lake Michigan, a finer showing of plums at fairs and on the trees than anywhere else he had been in the country. The plums of California do not excel those of Benzie county in quality."

At this meeting a first premium for a display of fruit was awarded to D. R. Van Amberg, second to Abel M. Smiltzer, third to James Rice.

According to the census of 1884, Benzie county had of apple orchards 1,053 acres, 24,461 bearing trees, yielding in 1883, 4,175 bushels of fruit.

Peach orchards, 123 acres, 3,966 bearing trees, yielding in 1883, 605 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$6,880.00.

Vineyards, 8 acres; grapes sold in 1883, 80 pounds.
wine made in 1883, 28 gallons.

Nurseries, 3 acres; products sold in 1883, \$390.00.

Market garden products sold in 1883, \$4,088.00.

ALPENA COUNTY.

Alpena was laid off as a separate county and named Anamiekee by act of the Legislature, approved April 1st, 1840, and, by an act approved March 8th, 1843, the name was changed to Alpena.

The organization of the county was effected in pursuance of an act approved February 7th, 1857, which provided for the completion of its organization on the first Monday of January, 1858.

The county seat was located at Fremont, the name of the town being changed to Alpena by act of the Legislature, approved February 25th, 1861. It is situated on Thunder bay, at the mouth of Thunder Bay river.

With the exception of a couple of limited tracts near the coast, the entire county lies within the valley of Thunder Bay river.

From about fifty feet near Lake Huron the surface rises to an elevation of about six hundred feet near the western boundary of the county.

Lumbering has been, and still is, the leading business in the county, agriculture and horticulture having been merely incidental and subsidiary thereto. Still, as early as 1875, these interests had grown to such importance as to warrant the organization of a County Agricultural Society on August 3rd of that year, although its first fair was not held till October, 1878.

Two years later, in 1880, its report to the State Board of Agriculture says: "The general verdict of those competent to judge is that vegetables, roots and garden plants even surpass those grown in the southern portions of the State. Here the farmer finds a ready market for all he produces. Being near the great lakes, he has the means of cheap transportation."

In reporting the third annual fair—that of 1880—the secretary states: "The exhibits, though not as large as anticipated, were still encouraging, owing to the very fine specimens of grains, roots and vegetables spread to the gaze of the interested spectator. Especially was this the case in the exhibits of fruits. Many varieties which cannot stand a more rigid climate south of us seem to do well whenever tried with us."

In a "Brief of Horticulture" A. C. Tefft, of the Pioneer, remarks: "Land is good and very reasonable in price. Potatoes and all vegetables grow luxuriantly. The home market will be good for all fruits that are grown for twenty years. The hardy varieties of small fruits, apples, plums and cherries succeed here, and as very few have yet entered this field it is a very promising one for men somewhat skilled in horticultural methods."

According to the census of 1884 Alpena county had of apple orchards 147 acres, 2,581 bearing trees, yielding, in 1883, 422 bushels of fruit.

Peach orchards, none.

The value of orchard products of all kinds sold or consumed in 1883 was \$419.00.

Vineyards, 5 acres; grapes sold in 1883, none.

wine made in 1883, none.

Nurseries, 1 acre; products sold in 1883, \$255.00.

Market garden products sold in 1883, \$2,465.00.

MONTMORENCY COUNTY.

This was laid off as Cheonoquet county by act of the Legislature, approved April 1st, 1840. The name was changed to Montmorency by an act approved March 8th, 1843.

The county seat is at Hillman.

The eastern and southeastern portions of the county lie upon the headwaters of Thunder Bay river, while the northwestern portion gives rise to several of the affluents of the Cheboygan. Professor Winchell's contour lines show elevations varying from three hundred to seven or eight hundred feet above the great lakes.

W. C. Cain, of Hillman, treasurer of the county, communicates the following:—

The first permanent settler is believed to be Francis Holmes, who, in 1814 or '75, settled in what is now the township of Hillman, and who still resides in the county. There had previously been lumber camps in the county, where a few potatoes had been grown, but none of these were permanent settlements.

As nearly as can be learned, the first fruit trees set in orchard were planted by Thomas B. Johnson. Such plantings have in many cases failed; generally, it is believed, from lack of proper care, from the browsing of cattle, and other causes incident to a newly-settled region. Trees that have been well cared for are now bearing well, though not as yet enough for home consumption.

The variety of soils is sufficient to please a great variety of tastes, varying from huckleberry plains to heavy, rich clay, the latter particularly in the eastern part of the county. The western part is high, and in many parts rolling, and timbered with pine, hemlock, and, in some quite large tracts, almost wholly with hard wood, with a loamy clay soil. The extreme western part of the county is said to contain some of the highest land in the lower peninsula.

There are quite extensive plains in the county, timbered with small pine and oak, which are being tested for agricultural purposes.

There are many small lakes in the county, some of them very pretty. In most cases they are surrounded by high land, generally plains.

The census of 1884 shows this county to have had, of apple orchards, 10 acres, 16 bearing trees, yielding in 1883 two bushels of fruit.

Peach orchards, none.

Total value of orchard products of all kinds sold or consumed in 1883 was \$4.00.

Vineyards, none.

Nurseries, none.

Market garden products, none.

OTSEGO COUNTY.

Otsego county was laid off as Okkudo, by an act of the Legislature, approved April 1st, 1840. The name was changed to Otsego, by an act

approved March 8th, 1843. It was organized in pursuance of an act approved March 12th, 1875, and which provided for the completion of its organization by the election of the proper officers on the first Monday in April, 1875.

The county seat is Otsego Lake.

This county occupies some of the highest lands in the lower peninsula. Its waters at the northwest flow through Pine lake in Lake Michigan. The north and northeast are drained by affluents of the Cheboygan river. The south gives rise to affluents of Au Sable river, and the headwaters of the Manistee rise in the central and western part.

Its elevation varies from seven hundred feet at the east and south to eleven hundred feet in the central and western portions.

Mr. A. W. Rush, of Vanderbilt, states, in substance, that the earliest settlement within this county was made about the year 1868, by the firm of Smith, Kelly & Dwight, for lumbering purposes, upon the site of the present village of Otsego Lake.

The first actual settlement for agricultural purposes occurred three years later, in the year 1871, at which time several settlers came in and located homesteads, among the first of whom were Dr. N. L. Parmater and Robert Menzies. Dr. Parmater located five miles northwest of the present village of Gaylord, which place had not yet been settled. Robert Menzies located about five miles still farther north. Each of these men, as soon as they had made small clearings, planted orchards upon their farms, which were the first orchards planted in this region. They are now in a flourishing condition, and the trees mostly in bearing. Other settlers have followed their example, and there are now more than a hundred orchards planted within the county.

Partly, doubtless, through inexperience, and partly from neglect, there are a good many orchards that are not doing well; still those that are properly cared for are generally in satisfactory condition, with the prospect that, within ten years, the county will produce its own supply of fruit, with the exception of peaches, which winterkill here.

Berries of all kinds are successful, including blueberries, blackberries and raspberries, all of which grow spontaneously, as do gooseberries also. Currants and strawberries are largely cultivated, yielding abundant crops.

There are several large wild plum orchards in the county. Cherries and "tame" plums (*prunus domestica*), are successful here, and crab apples of all kinds seem to stand the climate, and to succeed better here than the larger varieties, only the hardier of which can be fully relied on. The deep snows appear to injure the more tender varieties. No nurseries have been yet established in the county, nor are there any old Indian orchards.

According to the census of 1884 Otsego county had of apple orchards 91 acres, 293 bearing trees, yielding in 1883, 36 bushels of fruit.

Peach orchards, none.

The value of orchard products of all kinds sold or consumed in 1883 was \$11.00.

Vineyards, none.

Nurseries, none.

Market garden products sold in 1883, \$75.00.

ANTRIM COUNTY.

This county was originally laid off under the name of Meegisee by act of the Legislature, approved April 1st, 1840. The name was changed to Antrim by an act approved March 8th, 1843. The organization of the county was effected in pursuance of the provisions of an act approved March 11th, 1863, which provided for the election of the proper officers at the township elections on the first Monday of April following.

The name of the town of Meegisee was changed to Elk Rapids on March 11th, 1863, and the county seat located there.

In May, 1839, Rev. John Fleming and Rev. Peter Dougherty, missionaries under the auspices of the Presbyterians, located at the point subsequently known as Elk Rapids, but soon removed across the east arm of Grand Traverse bay to Old Mission.

In 1845 A. S. Wadsworth left Ionia, Michigan, in a small boat, in which he passed down Grand river to its mouth, and thence coasted northerly along the east shore of Lake Michigan to Grand Traverse bay. After stopping a few days at Old Mission he crossed the arm of the bay to the mouth of Elk river, where, in 1849, he and his family became the first permanent settlers in Antrim county. His original purpose was lumbering. He was soon followed by others.

Attention was, at an early period in the settlement of the Grand Traverse region, attracted to the fact of its peculiar adaptation to fruit growing. So obvious were its advantages in this respect that at an early period Professor Alexander Winchell was engaged to examine its capacities in this direction, and a fund was raised by private subscription for the purpose. His report was very favorable, and proved an effective means of attracting public attention in this direction.

At the meeting of the State Pomological Society, held at Traverse City on October 8th to 10th, 1873, during the annual fair of the Grand Traverse Union Agricultural Society, a beautiful exhibit of fruit was made from this county which was noticed as follows by the late J. P. Thompson, secretary of the State Pomological Society: "We find George E. Steele in charge of a fine collection of fruit from this county, consisting of seventeen varieties of apples and one of pears. The Baldwin was well colored, and so were the Spy and King. The Rambo was the largest of that sort in the hall, and the Greening was perfection itself. Mr. Steele, who is a surveyor, informs us that seven-tenths of the timber of Antrim county is sugar maple, and that there are miles of water-protected fruit lands in the county. Mr. L. R. Smith has been a resident of Antrim county for eighteen years. He was a dealer in nursery stock many years ago at Grand Rapids. From the nursery at that place, which he sold to G. C. Nelson, Esq., he brought trees to Antrim, and here exhibited the fruit gathered from those trees. In this collection were ten varieties of pears, the chief of which were the White Doyenne and Stevens' Genesee. His apples were the Spy, King, Greening, Fall Pippin, etc. Other gentlemen from Antrim were Richard Knight and J. J. McLaughlin, and their fruit told its own story."

R. Sherman, of Elk Rapids, in September and October, 1876, contributed to the Centennial exhibition of the Michigan State Pomological Society, at Philadelphia, a choice collection of apples.

Judge Ramsdell, speaking of the region around Grand Traverse bay, says: "Upon all the hill-sides with free atmospheric drainage to Lake Michigan, Crystal lake, Glen lake, Carp lake, Grand Traverse bay, Elk lake, Round lake and Torch lake, peach orchards may be planted with as much safety from winter-killing as at any place north of the latitude of Cincinnati."

W. W. Johnson, of Snowflake, Antrim county, in reply to queries, makes the following statements:—

Commercial fruit plantations have been made by Richard Knight, James Williams, W. W. Johnson and many others. These are generally in good condition.

The product finds an outlet, by rail and water, to lumber towns in the interior, and by water to Chicago.

W. W. Johnson started a nursery at Snowflake in 1874, which is still continued.

Groves for ornamental purposes are being planted by Mr. Johnson, which, after the planting in the spring of 1887, are expected to contain over one hundred species of indigenous and exotic trees and shrubs.

With a warm, fertile soil and a rolling surface, interspersed with deep lakes, with mild winters and summers free from frost, the western half of Antrim county is especially adapted to the producing of apples, pears, plums, peaches, cherries, grapes and small fruits generally.

At the exposition held at the city of New Orleans, during the winter of 1884 and the spring of 1885, an exhibit of Michigan fruits was made, under the auspices of the State Horticultural Society, and under the control of the State commission appointed for the occasion. A superior collection of apples was contributed to the display by Neil Munro, of Elk Rapids, which showed superior keeping qualities, as compared with those grown farther south, and which attracted much attention on account of the perfection and beauty of coloring of the specimens. Upon this collection premiums of \$5.00 each were awarded for the best plates of Flushing Spitzenburg, Mann and Northern Spy apples.

According to the census of 1884 this county had of apple orchards, 1,242 acres, 20,309 bearing trees, yielding in 1883, 7,153 bushels of fruit.

Peach orchards, 49 acres, 418 bearing trees, yielding in 1883, 164 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$8,493.00.

Vineyards, 30 acres: grapes sold in 1883, 500 pounds.
wine made in 1883, 60 gallons.

Nurseries, 7 acres; products sold in 1883, \$2,100.00.

Market garden products sold in 1883, \$653.00.

LEELANAW COUNTY.

This county was laid off by act of the Legislature approved April 1st, 1840, and was made to include the Manitou islands, together with what is now Benzie county. It was organized, with its present limits, in pursuance of an act approved February 27th, 1863, which provided for the election of the

proper officers and the determination of the county seat, by ballot, on the 1st Monday in the following April.

The county seat is at Leeland, and on the isthmus between Carp lake and Lake Michigan, to which place it was removed from Northport in 1882.

John Larue removed from Manitou island to Sleeping Bear bay—now Glen Arbor—becoming the first white inhabitant of Leelanaw county.

In 1848 Rev. Geo. N. Smith, a Congregational missionary, formerly of Ottawa county, located some distance north of the present site of Northport, but subsequently removed to that place, which received little increase of population till the arrival of Deacon Dame from Old Mission, in the spring of 1854, and of several others during 1855 and 1856, when the construction of a wharf afforded a convenient stopping place for lake steamers and other vessels. Mr. Smith was one of the earliest pioneers of fruit culture in the county.

The county constitutes a peninsula, lying between Grand Traverse bay and Lake Michigan. There are two prominent ridges extending north and south, with occasional elevations of nearly or quite five hundred feet above Lake Michigan. Between these ridges lie sandy plains and cedar swamps. The soil is mostly dark sandy loam, timbered with beech, maple, elm, hemlock, birch, cedar and basswood. Wheat, rye and oats succeed, and garden vegetables are produced abundantly and of excellent quality. Traverse bay potatoes command extra prices in the Chicago market. Wild fruits are abundant, and large quantities of berries are exported.

In June, 1867, the late Sanford Howard, at that time secretary of the State Board of Agriculture, visited the Grand Traverse region and made a special study of its capacities for agricultural and horticultural purposes. In his report he remarks, respecting Leelanaw county:—

“On the farm belonging to the late New Mission Seminary there is a large orchard which has been planted fourteen years, and has, for several years previously to the last, produced good crops. The trees are very large of their age, although they have never been manured. All persons who have seen apples grown here unite in saying that they have never known them surpassed in size or flavor.

“Pear trees have not, as yet, been planted to much extent. On the grounds of Rev. George N. Smith at Northport, there are several very fine trees of different varieties in a bearing state, the young fruit being handsomely set on the 18th of June. These trees have produced fruit for several years; the quality said to be very fine. There are also several fine trees in bearing condition on the grounds of Rev. Mr. Dougherty at New Mission, and on the seminary grounds before mentioned.

“At Northport and New Mission, Rev. George N. Smith and Rev. Mr. Dougherty have fully demonstrated the practicability of ripening perfectly any varieties of grapes that are grown in the south part of the State.

“He received in November, from Rev. George N. Smith of Northport, very fine specimens of Diel pear grown in his garden. They were of large size and excellent flavor. Mr. S. also sent handsome specimens of several kinds of apples grown on his grounds, including Rhode Island Greening, Belflower, Westfield, Newtown Pippin, Peck's Pleasant, etc. All the specimens were well grown, fair, and in every respect perfect of their kind. Mr. S. also sent specimens of the dent and several varieties of flint Indian corn—all well ripened, though the seed was planted on the second day of June. It was stated that the first frost to injure vegetation in the vicinity of Northport

the present autumn, was on the 22d of October. The small fruits can undoubtedly be grown here in great abundance."

A Leelanaw County Agricultural Society was organized in 1868. At its first fair, which occurred on October 20th and 21st of that year, a superior exhibit of fruits and vegetables was made.

The annual report for that year claims a fair yield of apples and a good crop of peaches; a very dry season, with no rain to benefit vegetation, from June 5th to July 29th.

In 1871 peaches were a good crop, as were apples also; although somewhat injured by drouth. Spring is generally late, but when it opens fruits and vegetation generally are safe from frost. The curculio has, for two or three seasons past, been very destructive to plums.

In a communication to the State Pomological Society in 1872, George Parmelee says of Leelanaw county: "At Northport there are a number of promising young peach orchards, of from five to ten acres, probably fifty acres within convenient distance from the dock; some quite large bearing apple, pear, cherry, plum and peach trees, are almost every year propped and tied up under crops of as beautiful and luscious fruits as ever gladdened the heart of man. There are some young apple orchards, near the light-house, which are a credit to the farmers who own them, for it would be hard to beat them in the State. A gentleman of this village is preparing to plant an apple orchard of one hundred acres.

"At New Mission, six miles south of Northport, are some large fruit trees that have attracted much notice. In the vicinity of Sutton's bay, and a few miles south of it, are some first-class young orchards. Near Traverse City is a forty acre orchard of apple and peach that has commenced bearing, and quite a number are younger and less in extent. There is also a very successful vineyard near by, and many yards with a few vines."

At the fifth annual fair of the Grand Traverse Union Agricultural Society on October 8th to 10th, 1873, the State Pomological Society was in attendance as a guest. J. P. Thompson, secretary, in the volume of "Transactions" for that year, speaks substantially as follows of the exhibit from Leelanaw county:—

The collection from Leelanaw county was not a whit behind its neighbors, while in some specimens it surpassed all others. C. V. Miller, of New Mission, had twenty-three varieties of apples. A plate of Northern Spy was the finest of the show. The Oldenburg was very popular, appearing in all the collections. The Alexander, showy and brilliant, usually rated third in quality, is here reckoned number one. Sweet Bough, of gigantic proportions, still retains a portion of its summer flavor. Mr. Miller esteems the Baldwin as the most profitable for his section. It matures well, stands the winter and is profitable for all purposes. The Flemish Beauty and Bartlett pears were unmistakable. Quinces also prove profitable.

Among other persons we met O. L. White, A. B. Dunlap and Solomon Steele, from Northport. They describe the soil along the streams as a limestone gravel, claiming that the soil, with the water protection, renders the county among the best in the State for the culture of fruit.

Peter Gustaff, of Northport, has an orchard of seventy-five plum trees, five years old, that have produced thirty bushels of fruit within the past two years, selling readily at \$3.50 per bushel. He says the curculio has discovered him, and must be fought.

K. Freeman, of Kasson, showed an extra plate of Roxbury Russet apples, as well as Bailey Sweet, Oldenburg and Winesap.

The census of 1884 gives to Leelanaw county of apple orchards, 1,396 acres, 28,801 bearing trees, yielding in 1883, 7,567 bushels of fruit.

Peach orchards, 60 acres, 1,691 bearing trees, yielding in 1883, 368 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$6,183.00.

Vineyards, 19 acres: grapes sold in 1883, 200 pounds.
wine made in 1883, 301 gallons.

Nurseries, 4 acres; products sold in 1883, \$25.00.

Market garden products sold in 1883, \$162.00.

PRESQUE ISLE COUNTY.

The State Legislature laid off Presque Isle county by act approved April 1st, 1840, but it remained unorganized till the passage of an act, approved March 31st, 1871, provided for the election of the proper officers on the first Monday in April of that year.

The county seat is at Rogers City, a port on or near Lake Huron.

The county includes the entire valleys of Aqueoc, Trout and Swan rivers, and the western portions are traversed by affluents of the Cheboygan river, while portions of the south are drained by branches of Thunder Bay river.

Lake Huron constitutes the entire northern and eastern boundary, giving it an unusual extent of lake border, with consequent protection against extremes of temperature, as well as facilities for cheap transportation. As a consequence, the elevation is nowhere very great, ranging from about fifty feet near the shore of Lake Huron to perhaps two or three hundred feet in portions of the interior, away from water-courses.

Of the adaptation of the county to horticultural pursuits little is certainly known, although its proximity to Lake Huron, lying mainly at the north, affords a sure guaranty against untimely frosts and dangerous extremes of winter temperature, constituting an assurance that, where suitable soils and aspect shall concur, such pursuits may be successfully prosecuted.

Presque Isle county, according to the census of 1884, contained of apple orchards 77 acres, 821 bearing trees, yielding, in 1883, 29 bushels of fruit.

Peach orchards, 1 acre, 5 bearing trees, yielding, in 1883, no fruit.

The value of orchard products of all kinds sold or consumed in 1883 was \$1,048.00.

Vineyards, none.

Nurseries, 1 acre; products sold in 1883, none.

Market garden products sold in 1883, \$70.00.

CHEBOYGAN COUNTY.

This county was laid off by an act approved April 1st, 1840, and its organization was provided for by act approved January 29th, 1853, which provided for the election of county officers on the first Tuesday in May of that year. The act established the county seat at Duncan City. It has since been removed to Cheboygan, on the river of that name, and near its debouchure in the Straits of Mackinac.

The original Indian name of the river and town is said to have been Chabwegan, signifying "a place of ore."

Cheboygan county may be said to be the most northern county in the lower peninsula. It lies almost wholly within the valley of Cheboygan river and its branches, having Lake Huron and Mackinac straits at the north, and including within its borders three large bodies of water, known as Mullet's, Burt's and Douglass lakes, as well as the larger portion of Cheboygan lake, a small portion of which is included in Presque Isle county.

Much of the county, lying as does, within the lower valleys of large streams and lakes, has but a moderate elevation of from fifty to two hundred feet above the surrounding lakes, although, at the extreme south, where its boundaries skirt the great northern plateau of this peninsula, it is said to reach an elevation of from six to seven hundred feet.

The Jackson, Lansing and Saginaw railroad passes from north to south a little west of the center of the county, and this, together with its convenient water transportation, affords excellent facilities for the convenient disposal of the products of the county.

Occupying an intermediate position between the comparatively narrow arms of Lakes Huron and Michigan, which unite in Mackinac straits, its water protection at the north may be assumed to be less effective than that of counties lying farther east or west.

Its horticultural capacities, however, are but slightly developed, and hence little can be confidently said of its capacities of such a character beyond the fact that, in common with the more northerly portions of the lower peninsula, the abundance of the indigenous small fruits, in the wild state, to some extent demonstrates its adaptability to the artificial culture of improved varieties, which may the more confidently be expected to succeed since they are sure to be covered beyond danger by the deep and permanent snows of winter.

According to the census of 1884 this county had of apple orchards 144 acres, 1,208 bearing trees, yielding, in 1883, 352 bushels of fruit.

Peach orchards, none.

The value of orchard products of all kinds sold or consumed in 1883 was \$458.00.

Vineyards, 1 acre: grapes sold in 1883, none.
wine made in 1883, 50 gallons.

Nurseries, 2 acres: products sold in 1883, \$100.00.

Market garden products sold in 1883, \$1,275.00.

CHARLEVOIX COUNTY.

This county was set off as Keshkanko, by an act of the Legislature, approved April 1st, 1840. The name was changed to Charlevoix by act approved March 8th, 1843. It was organized under an act approved April 2d, 1859, which provided for the election of the proper county officers on the first Monday in May following.

The county seat was located by the board of supervisors at Charlevoix, on the shore of Lake Michigan. The name comes from that of a Jesuit missionary from France.

John S. Dixon settled at Pine river, now Charlevoix, on May 11th, 1855, finding five Mormon families already there. The place had been a favorite resort of fishermen for an indefinite period. Dixon was subsequently joined by others. They were, for a time, seriously embarrassed by the operations of the Mormons, which, however, ceased upon the breaking up of their colony at Beaver island, upon the death of Strang, in 1856, and their consequent removal, after which immigration was resumed, and those who had been driven away returned.

The soil generally is a sandy loam, though with occasional somewhat extensive patches of clay and gravel. The peach is planted successfully in favorable locations, although this may perhaps be considered as debatable ground so far as the more tender fruits are concerned, though the apple, the pear, the plum, and the hardier fruits, as well as small fruits generally, may be planted with a reasonable assurance of success.

The county lies almost wholly within the valley of Pine lake, although Bear creek, in the northeast, makes its way into Little Traverse bay.

The greater portion of the county has an elevation of from fifty to two hundred feet above Lake Michigan, but, at the southeast, the elevation increases rapidly, and as we near the high central plateau, near the southeast corner of the county, it reaches an altitude of from seven to nine hundred feet.

The census of 1884 shows that the county had of apple orchards, 867 acres, 16,971 bearing trees, yielding in 1883, 3,728 bushels of fruit.

Peach orchards, 3 acres, 2 bearing trees, yielding in 1883, 9 bushels of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$3,977.00.

Vineyards, 4 acres: grapes sold in 1883, 150 pounds.
wine made in 1883, none.

Nurseries, 2 acres; products sold in 1883, none.

Market garden products sold in 1883, \$2,138.00.

 EMMET COUNTY.

This county was laid off under the name of Tonedagana by an act of the Legislature approved April 1st, 1840. It was organized as Emmet county in pursuance of an act approved January 29th, 1853, which provided for the

election of the proper officers, on the first Tuesday of May in that year. The location of the county seat was determined by the board of supervisors, who located it at Mackinac City. It has since been removed to Little Traverse, now known as Harbor Springs.

The county was named for Robert Emmet, the eloquent but unfortunate Irish patriot, who was executed by the British government as a traitor.

As shown by the direction of the water courses, the highest elevations in the county lie near its center; the streams diverging therefrom in all directions. No portion of the county is supposed to reach an elevation exceeding two hundred feet above Lake Michigan.

The earliest permanent settlement by white people was by Robert Cooper, at Little Traverse (now Harbor Springs), in the fall of 1851, although the region had been previously visited and temporarily occupied for missionary, fishing and trading purposes; but owing, doubtless, to the incursions of the Mormons from Beaver island, no very considerable settlements were made until 1875.

The earliest plantations of apple trees were made by the Indians at an early, but uncertain period. In the field notes of the government survey, made in 1840, an apple tree ten inches in diameter is mentioned.

In 1871 Thomas M. Downing reports in substance as follows to the State Board of Agriculture:

The soil and climate of this county are unexcelled, even by the far-famed Grand Traverse region. There are all kinds of soil to be found, from the lightest sand to a heavy clay loam. They are mostly limestone soils. Generally the high lands are the most fertile. There are late frosts in spring, and early frosts in autumn, but they are not severe enough to injure anything but corn.

The Indians comprise the most of the population, and they do nothing to fertilize the soil. Up to this time there has been but one thorough farmer in the county—the Rev. J. B. Wiekamp, who owns a thirty-acre farm in a high state of cultivation. He averages of wheat, thirty-three bushels per acre; oats, seventy-five bushels; potatoes, three hundred bushels.

In speaking of apples, he remarks that grafting and pruning are but Greek to the Indians, and yet they have a few fine, healthy and productive trees. I have, on my land, an apple tree grown from the seed planted by an Indian twelve years since. It fruited the fourth year, and has continued to do so every year since; last year yielding three barrels of fine fruit, resembling Rhode Island Greenings. Corn has never been planted in plowed ground by anyone until the present year. The Indians only make holes with a hoe, drop and cover the seed, and hoe once. Potatoes are never hoed after planting. Turnips, beets, carrots, etc., are grown on so small a scale that the yield per acre cannot be given.

Job Rohr of Cross Village, in speaking of other particulars, remarks that only a few plantations, and those of small fruits, have yet been made for commercial purposes, and these merely for local marketing. A small nursery has been started at Petoskey.

The census of 1884 gives to this county of apple orchards, 483 acres; 2,969 bearing trees yielding in 1883, 427 bushels of fruit.

Peach orchards, 9 acres; 30 bearing trees, yielding in 1883, 1 bushel of fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$309.00.

Vineyards, 2 acres: grapes sold in 1883, 100 pounds.
wine made in 1883, 100 gallons.

Nurseries, 4 acres; products sold in 1883, \$250.00.

Market garden products sold in 1883, \$2,981.00.

MANITOU COUNTY.

This county was set off and organized by an act of the Legislature, approved February 12th, 1855, which provided that the several islands in Lake Michigan known as the Beaver group, the North and South Fox islands, and the North and South Manitou islands, should be organized into a separate county by the name of Manitou. The act provided for the election of the proper officers on the third Tuesday in April of that year, and also authorized the supervisors to locate the county seat, which was accordingly located at the village of St. James, near the northern extremity of Beaver island.

Manitou is an Indian word, signifying Great Spirit.

The earliest settlement within the limits of Manitou county was made by Burton, Lord & Co., upon South Manitou island, in the year 1836, for the purpose of supplying cordwood to passing steamboats. (R. Kitchen, post-master, South Manitou.)

The same authority also states, in effect, that the first fruit trees planted on this island were about ten apple and ten plum trees, which were planted by Burton, Lord & Co., in 1852. These trees are yet healthy and productive.

About twenty apple and two pear trees were planted in 1858 by Putnam Burdick. Although this second lot of trees have not been cared for, they are all yet alive and bearing fruit.

In 1862 the residents upon the island availed themselves of the provisions of the homestead law, and about fifteen homesteads were entered, mainly by English, Irish and Germans. Since then fourteen fine orchards have been planted, including apples, pears, cherries, plums and also grapes, the orchards varying in size from two to four acres. They have been planted only with reference to home consumption.

These orchards are now fully in bearing, affording the inhabitants a good supply of fruit.

Plums and cherries are remarkably successful and very productive. Pears also are very healthy and thrifty. Peach trees winter-kill, although the lowest temperature known to have occurred upon the island is only thirteen degrees below zero. S. R. Beardman, formerly of Chicago, and the owner and manager of a stock farm upon North Manitou island, supplies the following information respecting it:—

North Manitou island is next to the most southerly of the group of islands which constitute the county of Manitou. It lies in about the latitude of Northport, and thirteen miles from the shore of Leelanaw county. It is about eight miles long and five miles wide. The soil is sandy loam, in some places rolling. Originally it was heavily timbered with maple, beech, birch, elm, cherry and basswood, interspersed with hemlock, and occasionally a mammoth pine. Along the water courses are considerable quantities of white cedar (*arbor vitæ?*) and balsam fir. Perhaps one-half the timber had been cut long since.

to supply fuel for steamboats. In such case the stumps have long since disappeared, and the ground is covered with clover and timothy.

The earliest settlement of which there is any record was made about the year 1847, by Nicholas Pickard and Joseph Stringham, who received government deeds of their lands in March, 1850. They located here in the direct steamer route between the upper and lower lakes, for the purpose of establishing a wooding station.

Until recently the only apple trees upon the island appear to have grown from seeds accidentally scattered. There are several hundred of these, still ungrafted, many of them bearing fruit of fair quality. No fruit plantations have been made for commercial purposes.

Small fruits of all kinds grow profusely, and wild grapes (*vitis cordifolia*?) are abundant.

An apple orchard, planted in 1883, by the writer, is prospering, and is already coming into bearing.

Rye, oats, potatoes and corn have succeeded well, the last two unusually well, this season, notwithstanding a severe drought.

On one day in 1884 the temperature was below zero, in 1885, eight below. Frost comes late, and, for the past three years, the ground has not been frozen earlier than December 15th, so that plowing could be done till that date. The writer having been a resident of Chicago, finds the climate here much less severe than there, due, doubtless, to the potent influence of the surrounding waters.

He believes that apples, pears, plums and grapes can be profitable grown there for the markets, also that the island may be made a pleasant summer resort, since it contains a small lake, half a mile wide by one and one-half miles in length, well stocked with bass and perch, to which are added the opportunity for quiet forest rambles and shady drives.

Beaver island, sixty or more miles northeasterly from those already mentioned, and containing the county seat, is the largest of the group, being thirteen miles long and six miles in its extreme width. Hog island lies at the northeast, Garden island north, and High island at the west, together with several inconsiderable ones adjacent. North and South Fox islands, lying intermediate between the Beaver and Manitou islands, are also included in this county.

Although no data are at hand to determine such to be the fact, it seems probable that the Beaver islands were occupied as wooding stations, and also by fishermen, coincidently with the occupation for such purposes of the Manitous, since, as early as 1847, this had become a regular stopping place for steamers, upon one of which came John Larue, in search of health, finding a pier or wharf at each of the two islands then visited by steamers. He remained here for a time and opened trade with the Indians. There were at that time two fishermen on North Manitou, and a lighthouse, kept by a Mr. Clark.

Such occupancy may properly be deemed to have been but temporary, and the permanent settlement of this group of islands may probably be dated from their occupation by King James J. Strang, with a branch of the Mormons, who adhered to him after the assassination of Smith at Nauvoo, on June 27th, 1844. Strang, after drifting about for some time, finally concentrated his followers upon the largest of the Beaver islands, where they established themselves some time prior to 1849.

The government surveyors found them in possession of the island, with very considerable improvements during the year 1855.

John H. Forster, who was connected with such survey, says (in Pioneer Collections, vol. 9, page 106): "We found good roads on the island, laid out with skill; also many improved farms under different degrees of cultivation, with some good crops growing, also good fences and outhouses. There was a decided appearance of thrift and industry.

"At St. James there was a little cluster of log buildings, a temple of square hewn pine logs of large size, but incomplete, a dry goods and grocery store, several dwelling houses and a good dock, with warehouse and wood piles. The sale of cordwood to passing steamers was quite a profitable business. The island furnished fine maple timber."

The colony seems to have steadily increased in numbers till its dissolution, in 1856, upon the assassination of Strang, when the population was replaced by another and a different class of people.

Although there can be little doubt that these islands have quite as favorable soils and climate, for any given purpose, as the adjacent mainland, little seems to have been done for their development horticulturally, beyond the providing for home and local needs.

According to the census of 1884, Manitou county has of

Apple orchards, 9 acres, 170 bearing trees, yielding in 1883, 10 bushels of fruit.

Peach orchards, none; and no nineyards, nurseries or market gardens.

THE UPPER PENINSULA.

Charles Whittlesey, writing from Eagle Harbor, in 1853, (in the report of the State Board of Agriculture) says: "The capacity of the soil along the banks of the streams that discharge into Lake Michigan from the north is, so far as I have seen it, not very great. The streams I refer to are the Pine, Manistique, Whitefish, Escanaba and Ford rivers. Opposite these and heading with them, on the Lake Superior side, are the Tahquamenon, Miner's, Twin and Chocolate rivers, on which there is very little good farming land.

"West of the Chocolate is a woody and broken range of highlands, extending to the sources of the Menominee, the Wisconsin and the Ontonagon, known as the Huron range. It is one thousand to eleven hundred feet above the level of the lake, with irregular valleys and slopes of good land. This space includes the iron region, which extends from the vicinity of Marquette to the twin falls of the Menominee.

"All over the Lake Superior country the pine, balsam, white cedar, spruce and hemlock may be seen. But over large spaces these evergreens do not predominate, and this is the sign of a more fertile soil. Where the slopes of the mountains are moderate and smooth there are birch, hard maple, elm, lime and occasionally a Spanish oak. I never saw a chestnut or hickory and rarely a beech.

"The remaining portion of this peninsula, from Portage lake and L'Anse, west, to the Montreal river, may be divided into two districts. That part lying south of the mineral range, on the head waters of the Ontonagon, Sturgeon and Menominee rivers is better adapted to agriculture than any other equal space of this peninsula.

"The mineral range is less broken and abrupt west of Portage lake, and offers a good proportion of farming land. The lands north of this range, and between it and the lake, are generally good. This belt of country, having navigable water and excellent fish on one side, and worked and workable mines on the other, offers the highest inducements to farmers of any region I know. The slope is gentle from the foot of the mountains to the water, with a soil of red clay and sand, containing lime. I am satisfied that it will produce wheat. It produces better grass than I have seen elsewhere, as well as oats, rye, peas, potatoes, turnips, beets, carrots and cabbages. Very few varieties of corn will come to maturity. I am this season trying a little buckwheat and millet.

"The climate is not the same in all parts of the lake country, it being influenced by position and elevation. It is, however, everywhere healthy, resembling that of Vermont. Navigation is closed, on an average, five months in the year."

In an address before the State Agricultural Society at Detroit, in September, 1854, Bela Hubbard of that city remarks:—

"The connection between the geology of a country and its agriculture is well understood. New England, composed mostly of rocks of the primary

or granite systems, has a soil by no means naturally fertile, and that under unfavorable circumstances, so much has been accomplished in that 'land of gray rock and shaggy wood,' is due to the energy, enterprise and free labor of its population."

Comparing these with the soils of Michigan and the Mississippi valley, he remarks: "On the other hand, the States comprised within the immense valley of the Mississippi have a soil unexcelled for fertility in the world. It is composed, in great part, of drift and alluvium, not directly derived from the rocks lying below. Commencing at the chains of trap and primary rocks which bound the shores of Lake Superior, and extending southerly, we find a deep mass of sands, gravels and clays spread, as by some deluge, over the whole country, often deeply covering and concealing the underlying rocks, and composed of the fragments of a great variety of rocks, among which limestone and trap are conspicuous. The immense belt of limestone which nearly surrounds our peninsula, and the great abundance of trap rocks further north, have furnished largely to the soil those mingled and fertile materials which have constituted it one of the best in the Union, and especially suited to the production of wheat."

The bearing of these facts upon the constitution, and upon the horticultural as well as the agricultural capacity of the arable soils of the upper peninsula is too obvious to require either comment or explanation.

Alexander Campbell of Marquette, in an address delivered in Representative hall, Lansing, February 6th, 1861, says: "The far-seeing sage and philosopher, Dr. Franklin, when, as an American minister in Paris, he was fixing the boundary line between the United States and Great Britain, saw something of the importance of this country in the future. At that time he had access to the journals and charts of a corps of French engineers, who had sloops and were exploring Lake Superior when Quebec fell to the British; from which charts, he tells us, he 'drew the line through Lake Superior to include the most and the best of the copper to the United States.' 'And,' says he, 'the time will come when drawing that line will be considered the greatest service he ever rendered to his country.'"

In describing the climate, he in effect, says that while a common impression respecting the winters is that they are frigid and severe beyond endurance, and while the average yearly temperature is seven degrees lower than that of Detroit or Chicago, and while it is also true that the winters are longer and the snows deeper, such is the bracing and life-giving power of the summer air that it has become more than a Saratoga for the jaded business man and the invalid; while among its most valued citizens, are hundreds who owe their lives to the recuperating agencies of the climate, and their experience is that the winters are the pleasantest part of the year; that the vitality they impart is a positive luxury, raising them above the debility and the feverish colds and coughs so common in lower latitudes.

"It embraces an area of 16,237 square miles—territory sufficient for a State—the coast of which is washed by the waters of Lakes Michigan, Huron, the St. Mary's river and Lake Superior, in all a coast border of nearly one thousand miles, and enriched with some of the finest natural harbors in the world."

While the mineral deposits are of primary importance, the country is by no means without advantages as an agricultural region. It cannot be expected to prove as well adapted to such pursuits as are Illinois or lower Michi-

gan; although, in many respects, and especially in soils, it is as far in advance of much of New England as Illinois is in advance of it. Even along the mineral ranges there is much good soil, on which agriculture is successfully prosecuted.

"The best farming lands lie south of the mineral deposits. From the base of these ranges to the State line is a very large territory, now almost an unbroken wilderness with a surface comparatively level, a rich, productive soil and good timber, where farming on a large scale may be inaugurated with success; the products finding a ready market at the mines and at the commercial towns on the lake.

"Though the length of the winters may militate against raising stock to profit, and the shortness of the season may render the corn crop uncertain, yet wheat, rye, barley, oats, hay, beans, peas and potatoes—the staples of life—together with most garden luxuries, as currants, peas, radishes, cucumbers, strawberries, and the hardier fruits of the orchard, as the apple, cherry, plum and pear, will be raised in abundance, and some of them in great perfection. It is astonishing how rapidly, and to what size some vegetables grow in this climate."

Very much of the rapid development of this peninsula has been due to the discovery and working of its immense deposits of iron ore, the original discovery of which is thus chronicled by Hon. Peter White, of Marquette, in the 8th volume of Pioneer Collections, at page 147: "In the summer of 1844, the late Dr. Douglass Houghton, whose memory is deeply revered throughout the region, where were his latest labors, and where he lost his life, was engaged in the linear survey of this portion of the upper peninsula. The late Mr. Wm. A. Burt, deputy surveyor under him, was running the township lines in Marquette county, and, on the 18th of September, encamped with his party at the east end of Teal lake. Mr. Jacob Houghton was a member of that party, and gives the following account of the first discovery of Lake Superior iron ore:—

"On the morning of the 19th of September, 1844, we started to run the line south between ranges 26 and 27. As soon as we reached the hill to the south of the lake, the compass-man began to notice the fluctuation in the variation of the magnetic needle. We were, of course, using the solar compass, of which Mr. Burt was the inventor, and I shall never forget the excitement of the old gentleman, when viewing the changes of the variation—the needle not actually traversing alike in any two places. He kept changing his position to take observations, all the time saying: How would they survey this country without my compass? What could be done here without my compass? It was the full and complete realization of what he had foreseen when struggling through the first stages of his invention. At length the compass-man called for us all to come and see a variation which beat them all. As we looked at the instrument, to our astonishment, the north end of the needle was traversing a few degrees to the south of west. Mr. Burt called out, Boys, look around and see what you can find! We all left the line, some going to the east, some to the west, and all of us returned with specimens of iron ore, mostly gathered from out-crops. This was along the first mile from Teal Lake." This occurred eleven years prior to the construction of the Sault Ste. Marie ship canal, which was built by the State from an appropriation of 750,000 acres of government lands made by Congress in August, 1852."

The Iron Mountain railroad, the earliest enterprise of this character in

the upper peninsula, was surveyed in 1852, its construction commenced in 1855 and it was completed and equipped for business in 1857.

C. D. Lawton, of Lawton, Van Buren county, who has spent much time in the upper peninsula, contributes the following facts respecting the status of horticulture in that region:—

He has seen fair apples grown there, also many fine trees which sometimes bear well. There is an abundance of plums, when frosts do not catch the bloom in spring. These are mostly wild, red plums, although the cultivated varieties (domestica) seem to be equally successful where tried. Pears do pretty well also. At least he has seen trees loaded with excellent fruit, which matured nicely.

He never elsewhere saw Early Richmond cherry trees more heavily loaded with fruit than here, wherever they have been planted. The branches needed to be propped up, to prevent breaking under the loads of fruit.

Currants and gooseberries also abound. Strawberries grow luxuriantly and bear prodigiously, and the same is true of raspberries and blackberries.

Although this is a cold country, it has much good soil, well adapted to root crops, as well as to many of the hardy fruits, which will doubtless be successfully grown as soon as agriculture shall become a staple industry.

CHIPPEWA COUNTY.

Chippewa county was set off and organized by an act of the Legislative Council of the Territory of Michigan, approved December 22d, 1826, and which took effect from and after the first day of February, 1827. Its boundaries were originally the Mississippi river on the west and the British dominions on the north.

The seat of justice was fixed by the terms of the act at Sault de St. Marie.

The name, Chippewa, is that of a once powerful tribe of Indians, sometimes known as Ojibways.

This county is now bounded on the west by the recently organized county of Luce, which was taken mainly from its western portion.

Sault de St. Marie was one of the points at which the French established their earliest missions and trading posts, and at no period since has it ceased to be an important station, either for military or fur trading purposes. In the summer of 1822 a visitor here, writing to the *Detroit Gazette*, says: "Of the climate and the soil the facts thus far disclosed will permit us to speak in favorable terms. Potatoes, oats, peas and garden stuff generally succeed with certainty every year. Mr. Johnston will raise twelve hundred bushels of potatoes this season, and has some fine fields of oats, peas and herd's grass. In his garden we find radishes, lettuce, carrots, etc. Several varieties of the common rose and the hyacinth, pink and violet are now in bloom, and the surrounding fields abound in delicious strawberries."

A county agricultural society was organized in this county on June 28th, 1878.

John H. Foster, in vol. 8 of *Pioneer Collections*, 1885, says: "Within the last ten years the Sault has taken a new lease of life, and is now a flourishing town. The agricultural resources of Chippewa county, of which the

Sault is the county seat, have proved unexpectedly great. The lumbering interests, too, are of importance."

The report of the county agricultural society for 1880 says: "This county, with about one and one-half millions of acres, nearly one-third of which belongs to the Detroit, Mackinac & Marquette railroad company, has also many thousands of acres of the finest hardwood land to be found anywhere. The timber is sugar maple, beech, ironwood, elm, basswood, moosewood, etc. This land, when designated first choice, has a subsoil of red clay with a surface soil of eight or twelve inches of black mould.

"Within the past four or five years many immigrants, attracted here by the readiness with which they could obtain land under the homestead law, who were brought up to procure their bread from the soil by the sweat of their brow, have attempted growing almost everything usually grown on the farm. Their labor has, in almost every instance, been crowned with astonishing success."

Speaking of the horticultural exhibit at the county fair for 1880, the report says: "The center of attraction in the vegetable room was the display of apples made by Messrs. Thomas and E. A. Trelease. Fruit was on the tables also from J. Dingman's and Thomas Ryan's orchards, but evidently Messrs. Trelease were wise in securing Minnesota nursery trees. This exhibit shows that it is practicable to grow successfully all the hardier varieties of apples."

The census of 1884 shows that Chippewa county had two acres of apple orchard, five bearing trees and one bushel of fruit grown in 1883.

MACKINAC COUNTY.

Mackinac county was laid off and organized in pursuance of a proclamation of Lewis Cass, as governor of the Territory of Michigan, dated October 26th, 1818. Its original limits comprehended the entire upper peninsula, together with so much of the lower peninsula as lay northward of the then northern limits of Macomb county. The original name was Michilimackinac.

"An old legend relates that a large number of people were assembled at point St. Ignace, and that while intently gazing at the rising sun, during the great Manitou, or February moon, they beheld the island suddenly rise from the water, assuming its present form. From the point of observation it bore a fancied resemblance to a huge turtle, hence they gave it the name Moeche-ne-mock-e-nung, which means a great turtle. This name, when put in a French dress, became Michilimackinac." "Pioneer Collections," vol. —. Modern practice has simplified the name to Mackinac, which, in accordance with the French pronunciation of its terminal syllable, is frequently spelled as pronounced, Mackinaw.

The island of Mackinac, upon which is situated Mackinac City, the county seat, has been constituted a national park.

The Legislature of 1886 and '87 has cut off five of the northern townships of this county, which become part of the newly organized county of Luce.

Although this county contains locations which attracted the attention of the earliest missionaries and traders, it has not, so far, attracted special atten-

tion as either an agricultural or horticultural region, and little is generally known of its actual capacities for such pursuits, although the proposed construction of railroads through its territory is beginning to attract the attention of settlers.

The census of 1884 shows that it contained, at that time, but five acres of apple orchard, but at that date without product, and that it produced and sold but \$350.00 worth of market garden products.

Its present limits are wholly eastward of the elevated mineral regions.

LUCE COUNTY.

Luce county consists of what was formerly the west five ranges of townships in Chippewa county, together with a tier of five townships taken from the north side of Mackinac county. At the north it borders on Lake Superior, and it is bounded on the west by Schoolcraft and Alger counties.

It was set off by act of the Legislature, approved March 1st, 1887, and its organization was completed in pursuance of the provisions of such act, by the election of the proper county officers, on the first Monday in April, 1887.

The county seat is at Newberry, a town on the line of the Detroit, Mackinac & Marquette railroad.

The county was named for Hon. Cyrus G. Luce, who was governor of the State at the time of its organization.

Lying, as it does, without the mineral regions, with no prominent commercial point upon the lake, its settlement and organization as a separate county, are doubtless mainly due to the location of the railroad through hardwood lands, which may be expected to supply charcoal for smelting purposes, while such lands, when cleared, will be adapted to agricultural purposes.

Owing to its very recent organization its census returns, as well as any facts respecting its agricultural and horticultural capacities, are embodied in those of the original counties.

SCHOOLCRAFT COUNTY.

Schoolcraft county was laid off and organized by an act of the Legislature, approved April 3d, 1848. The seat of justice was established at Onota, a village on Grand Island harbor, on the south shore of Lake Superior, but the recent organization of Alger county transfers the village and its vicinity to that county. The present county seat is Manistique, a port on Lake Michigan.

Little information is at hand respecting either the agricultural or horticultural development of this county, and as mining localities are not near enough to create local demand, no very considerable enterprises of this character are to be anticipated, save at points favored with railroad or water transportation.

The census of 1884 shows 14 acres of apple orchards within the county, but no bearing trees.

The value of market garden products sold in 1883 is given at \$500.00.

ALGER COUNTY.

This county was set off from Schoolcraft county by act of the Legislature approved March 11th, 1885. Its organization was completed in compliance with the provisions of such act, by the election of the proper county officers on the first Monday in April, 1885.

The county seat was located at Au Train, by vote of the supervisors.

The census statistics of 1884, having been collected prior to the organization, are of course included in those of Schoolcraft county.

DELTA COUNTY.

This county was originally laid off by an act of the Legislature, approved March 9th, 1843, but embracing more territory than at present.

Its limits were restricted and its organization provided for by a subsequent act approved March 12th, 1861.

The county seat was located by three commissioners appointed by the Legislature, who established it at Escanaba, an incorporated village on the waters of Lake Michigan.

This being the Lake Michigan terminus of the railroad, connecting with the entire upper peninsula mining region, has very naturally drawn about it an agricultural and horticultural population. A farther inducement in this direction may very possibly have been the proximity of the mines.

The influence of these and possibly other causes is shown in the statistics of the census of 1884, which shows of apple orchards, 17 acres, bearing trees 188, yielding in 1883, 33 bushels of fruit.

Peach orchards, 10 acres; 18 bearing trees, yielding in 1883, no fruit.

The value of orchard products of all kinds, sold or consumed in 1883, was \$26.00.

Vineyards, none.

Nurseries, none.

Market garden products sold in 1883, \$898.00.

MARQUETTE COUNTY.

This county was laid off by act of the Legislature, approved March 9th, 1843, but the boundaries were changed by an act approved March 9th, 1845. The organization of the county was completed under the provisions of an act

approved April 7th, 1851, which provided for the election of the proper officers on the second Monday in June, 1851.

The county seat is Marquette, which was named from the Jesuit, Pere Marquette, one of the earliest and most noted of the French missionaries and explorers.

The first discovery of iron ore occurred, in this county, in the year 1844, an account of which is given under the head of the upper peninsula. The first iron was made from these ores in August, 1846, by Mr. Olds, of Coocush prairie. (Vol. 8, Pioneer Collections, p. 148.)

In this volume, at pages 149 to 151, Hon. Peter White says, in substance: "In the spring of 1849, on the present site of the city of Marquette, there was no sign of a human habitation, save one or two Indian huts and a small log warehouse belonging to the Jackson Iron Company.

"In April, 1840, we started from what is now the city of Marquette, and, at the Cleveland mountain, found Captain Samuel Moody and John H. Mann, who had spent the previous summer and winter there." He well recollects how astonished he was the next morning when Captain Moody asked him to go with him to dig some potatoes for breakfast. This was in the month of May, and the winter's snow had preserved them. He opened one or two hills and filled his pail with large and perfectly sound potatoes. He then said: "I may as well pull up a few parsnips and carrots for dinner, to save coming up again;" and, sure enough, he had them in abundance.

He returned to the lake shore on the 10th of July, and at 1 o'clock of that day they commenced to clear the site of the present city of Marquette.

In 1851-'3 Marquette consisted of a few houses, a stumpy road winding along the lake shore, a forge which burned up after impoverishing its first owners, a trail westward, just passable for wagons, leading to another forge (still more unfortunate in that it did not burn) and to the developed iron hills beyond, with two or three hundred people uncertain of the future, who had fallen into the march of the century and were building better than they knew.

Alexander Campbell, of Marquette says: (Pioneer Collections, vol. 3, pages 249, 250 and 251.) "Very generally this part of the country is uneven, rocky and mountainous. In going from Marquette by railroad to the iron mountains the locomotive the first thirteen miles carries you up an elevation of eight hundred and fifty feet above the level of the lake, frequently presenting bold, stair-like cliffs, affording many scenes of wild, picturesque beauty.

"At Marquette, all who have engaged in farming reap good crops of hay, oats, potatoes, turnips, etc., in a ready market at good prices and good pay, for until this branch of industry produces an excess of these staples they will bring twenty-five per cent more in that market than the same articles do below. Within the last two years quite a settlement of farmers has been formed a few miles south of Marquette, on the Chocolate river, and already they are reaping better returns than thousands of new settlers of the same age in more salubrious latitudes. In this locality there is a large tract of very desirable country, the soil being a rich loam, the timber mostly large sized maple, the face of the land comparatively even, with living springs and small streams of the best water on almost every quarter section."

Mr. Campbell saw, at Marquette, in October, a Norfolk turnip raised by D. Bishop, one and a half miles from town, weighing twenty pounds.

C. D. Lawton, who is familiar with the upper peninsula, says: "I have

seen Early Richmond cherry trees loaded with fruit more heavily than is usually the case elsewhere. The limbs were propped up to support the fruit. These trees were at Marquette, where many people in the city have them. Currants, gooseberries, raspberries, and strawberries are abundant and prolific."

The census of 1884 shows this county to possess, of

Apple orchards, 22 acres, 267 bearing trees, yielding in 1883, 105 bushels of fruit.

Peach orchards, none.

The value of orchard products of all kinds, sold or consumed in 1883 was \$85.00.

Vineyards, none.

Nurseries, none.

Market garden products sold in 1883, \$3,844.00.

This county has, for several years, maintained an agricultural society which holds very creditable annual fairs.

MENOMINEE COUNTY.

This county was set off under the name of Blecker, by an act of the Legislature, approved in —, 1861. This act named three persons, who were to designate three locations, to be submitted to a vote of the people, and the one receiving the greatest number of votes was to be the county seat.

The name was changed to Menominee by an amendatory act, approved March 19th, 1863.

The county seat is Menominee, which is the name of the tribe of Indians who originally inhabited the county.

"Pioneer Collections" (volume 1, page 263 to 272) contains extracts from a history of this county, written by Hon. E. S. Ingalls, which state that the first permanent white settler in the county was Chappee, an Indian trader of French extraction, who came here as agent for the American Fur Company, and established a post in 1796.

The next permanent white settlers were William Farnsworth and Charles Brush, who came here in 1822, and who commenced the packing of white-fish for market. They also built the first saw-mill on the Menominee river, in 1832.

Marinette, the half-breed grand-daughter of an Indian chief, is said to have planted the first apple orchard, which is still bearing.

The Chicago & Northwestern Railway Company completed its road to Menominee in 1871. In 1872 it was extended to Escanaba, completing its connection with the upper peninsula mining region. Arrangements were also at the same time in progress for the construction of a railroad to the Menominee iron range and marble quarries.

The first improved farms were at Wausaukee Bend, at Chappee's Rapids. The beech and maple lands, as well as the cedar swamps, when cleared, make good farms; the cedar swamps, when properly drained, being best. Farming here has been found not only practicable but profitable.

In 1884 Menominee county had of apple orchards, 21 acres, 306 bearing trees, yielding in 1883, 39 bushels of fruit.

Peach orchards, none.

The value of orchard products of all kinds, sold or consumed in 1883, was \$25.00.

Vineyards, none.

Nurseries, 14 acres; products sold in 1883, \$650.00.

Market garden products sold in 1883, \$1,626.00.

KEWEENAW COUNTY.

This county was laid off, organized, named and the county seat established at Eagle River, by an act of the Legislature approved March 11th, 1861.

Keweenaw is an Indian name derived from Kee-wi-wai-non-ing, and signifies a portage.

John H. Forster (Pioneer Collections, vol. 8, page 137) says:

“Down to the end of the season of 1847, exploring and mining for copper had been the great absorbing pursuits engaging the attention of the pioneers. Explorations had been made in all the regions bordering the lake; but regular mining had been confined to Keweenaw Point, of which the famous ‘Cliff’ was the chief exponent. This, in 1860, had grown to large dimensions, feeding a large village of miners and laborers, with broad cultivated fields, open to the sun and yielding grass, oats, potatoes and other root crops abundantly.”

But horticulture here, and agriculture as well, are necessarily limited to supplying the needs of the mining population, for such articles as can only be imported at a cost as great or greater than that of local production.

The census of 1884 shows neither orchards nor fruits grown in the county; and only \$200.00 worth of market garden products sold; while the wood cut in 1883, was valued at \$6,430.00, and the total value of all forest products was \$20,065.00.

IRON COUNTY.

This county was laid off and organized in pursuance of an act of the Legislature approved April 3d, 1885. The county officers were appointed by the governor. The county seat was temporarily established at Iron River, but was subsequently changed, by popular vote, to Crystal Falls.

The territory to constitute this county was taken from the southwesterly portion of Marquette county.

Little information is at hand respecting the development of either agriculture or horticulture in this county, and its organization is so recent that its census returns are included in those for the county of Marquette.

BARAGA COUNTY.

This county was taken from the easterly portion of Houghton, and was constituted a separate county in pursuance of the provisions of an act of the Legislature, approved February 19th, 1875. Section 2 of said act located the county seat at the village of L'Anse.

In pursuance of the provisions of said act, the organization of the county was completed by the election of the proper officers on the first Monday in April, 1875.

L'Anse was so named by the French explorers, meaning "the bay."

A letter written to the Detroit Gazette, in July, 1822, says: "Mr. Holliday, who lives at L'Anse, which is Keweenaw bay, on Lake Superior, has heretofore, and will this season, raise at that place Indian corn, peas and garden vegetables, all of which flourish well, and there is a tract of rich soil in that vicinity which is well adapted for an agricultural settlement."

C. D. Lawton has seen, at L'Anse, fine apples of Fameuse, some of the Russian and other hardy varieties, also plums, pears, morello cherries, currants, gooseberries, strawberries, raspberries, huckleberries, etc.

The following is a nearly full transcript of a valuable letter from Abel Hall, of L'Anse, under the date of September 20th, 1886:—

"When I came to what is now Baraga county, forty-one years ago this summer (1845), there were three settlements; one by the North American Fur Company, one Methodist Episcopal mission and one Catholic mission. There were, at that time, only two or three apple trees, and three or four wild plum trees growing in what is now Baraga county, at the North American Fur Company's station.

"In 1846 Rev. J. H. Pitzel introduced the first currant bushes, at the Methodist mission, in this county. At this time a lumber company commenced work, at the head of the bay, on Fall river, where the village of L'Anse now stands.

"In the fall of 1846 a Mr. Simons planted some apple seeds, near Fall river, the first planted since those at the fur company's station. In 1853 or '54 Rev. D. A. Curtis planted apple seeds at the Methodist mission. The trees grown from these seeds are yet yielding some fruit.

"In 1862 Rev. P. O. Johnson brought here and planted three or four hundred fruit trees, which, from lack of hardiness, nearly all died. A nurseryman also brought some trees from LaPoint, at the head of Lake Superior, which included Oldenburg, Wealthy, Siberian crab and others which are doing well and producing fair crops of fruit.

"For the last ten or twelve years our supply of fruit trees has been mostly obtained through the agent of nurseries at Rochester, New York. Such trees, generally, are doing well. The varieties are mostly Oldenburg, Wealthy, Transcendent, Montreal Beauty, etc.

"Early Richmond and common red cherries do well here, but the black (Mazzard?) are too late, and lack hardiness.

"The only fruit plantations here are for home supply, or for the local market, except, perhaps, currants and strawberries. I have commenced a strawberry plantation, and will plant a plat of currants next season.

"John Street has a small cherry and currant plantation, but the fruit is consumed within the county.

“Hardy and early varieties of apples, Morello cherries, currants and strawberries, with proper cultivation, are successful and yield a fair return for the expenditure of money and labor.

“The old fruit trees which were upon the fur company’s grounds when I came here are now dead, and young trees fill their places.

“The only notable plantation of trees, for park or cemetery purposes, are at the Methodist mission.

“Formerly it was not supposed that the larger fruits could be successfully grown here, but, from my experience, hardy and early varieties of apples, plums and cherries will succeed. Pears may be regarded as less certain.”

The census of 1884 reports, in Baraga county, of apple orchards 12 acres, 101 bearing trees, yielding, in 1883, 81 bushels of fruit.

Peach orchards, none.

The value of orchard products of all kinds sold or consumed in 1883 was \$94.00.

Vineyards, none.

Nurseries, none.

Market garden products sold in 1883, \$2,400.00.

HOUGHTON COUNTY.

Houghton county was laid off by act of the Legislature approved March 19th, 1845. By the provisions of such act its territory extended eastward to the west line of Schoolcraft county.

Houghton, the county seat, south of Portage lake, was laid out in 1852.

Both were named for Douglas Houghton, who lost his life by drowning while exploring this region as State geologist.

Some mining had been done in the Portage lake region as early as 1846; but the discovery of its real value has been largely due to the persistency of the late Ransom Shelden. Its subsequent development has been greatly aided by the Improvement Company, whose labors have been instrumental in opening to navigation the shallow outlet of the lake.

Of the development of its horticultural capacities little information is at hand, although it is probably true that the wants of the local population are largely supplied from products grown here, at least, so far as vegetables are concerned.

The census reports no horticultural products, except the single item of market garden products, of which the value sold in 1883 was \$1,150.00.

ONTONAGON COUNTY.

This county was laid off by act of the Legislature, approved March 9th, 1843, under the name Ontonagon, and was made to include Isle Royale and the adjacent islands.

Its boundaries were changed by an act approved April 3d, 1848, by the omission of Isle Royale.

The name is derived from the Indian word, Nunda-Norgan, signifying hunting river.

The county seat is at the village of Ontonagon.

The Legislature of 1886-7 has still further reduced the extent of the county by laying off the new county of Gogebic.

Although explorations for mining purposes had been extensively made in all the region bordering the lake, attention had not been specially attracted to Ontonagon county till, upon the discovery of the famous Minnesota mine, it at once became prominent as a producer of mass copper.

Mr. John H. Forster (*Pio. Col.* vol. 8, page 137) says: "This mine was discovered by the late Samuel O. Knapp (a well known and esteemed horticulturist) of Jackson, who opened it at a point where the so-called ancient miners had worked in pre-historic ages. When he had penetrated to the depth of eighteen feet, he came to a mass of native copper, ten feet long, three feet wide, and nearly two feet thick, weighing over six tons. On digging round the mass, it was found to rest on billets of oak, supported by sleepers of the same material. The wood, from its long exposure to moisture, was dark colored and had lost its consistency. It opposed no more resistance to a knife blade than so much peat. The earth was so firmly packed as to support the mass of copper. The ancient miners had evidently raised it about five feet, and then abandoned the work, as too laborious. The number of ancient (stone) hammers which he took from this and other excavations, exceeded ten cart loads. They were of green stone and porphyry boulders. Selecting a stone of the desired size and form, the ancient miner cut a groove, arched it so that it might be secured by a withe, and thus wielded as a sledge hammer."

After this discovery the Ontonagon district speedily assumed such importance as to overshadow the older Keweenaw district. It was settled by a hardy, intelligent population, who subdued the dense forests, and planted flourishing towns and villages. They built a harbor at the mouth of the river without governmental aid. Mr. Cash and other far-sighted individuals cleared fields for agricultural purposes. The soil of some parts of the county, owing to a proper admixture of clay, invited the farmer to enter upon a profitable industry. Lands in mining regions are generally thin, poor and unproductive, but, where farm crops can be raised to advantage, the farmer always finds, in mining regions, quick sales with large profits.

The agricultural interests of the county gradually grew to such importance as to warrant the forming of an agricultural society, which was accordingly organized in 1867.

An address by Alexander Campbell, of Marquette, (*Pio. Col.*, vol. 3, pages 249-250) says:—

What is known as the copper or trap range, running from Keweenaw Point to the Montreal river, in places rises from five hundred to twelve hundred feet above the level of the lake. Along these ranges, even, there is much good soil, where farming is, or may be, carried on successfully. During the past year Messrs. Anthony & White raised on the Minnesota farm, belonging to the great Minnesota mine, 10,848 bushels of potatoes, 2,100 bushels of turnips, 150 tons of hay and 100 tons of oats. Other persons also raised 3,000 bushels of potatoes and turnips. The Lake Superior Miner of December 29th, 1860, says: "The hay and oat crop of Ontonagon county was not less than seven hundred tons, and the product of potatoes and turnips was certainly from 25,000 to 30,000 bushels."

Wheat has not yet been grown to any considerable extent, as there is a lack of facilities to manufacture it, but Messrs. Sales and Cash, at Ontonagon, and persons at other points, have grown it as an experiment, and found it, in both quantity and quality, to exceed their anticipations.

Mr. Cash, on his farm near Ontonagon, grows as fine strawberries and currants as are to be found anywhere, and in his orchards the apple, the plum and the cherry prove successful.

C. D. Lawten also reports hardy varieties of apples, as well as plums, Morello cherries, and many small fruits, as successful in this county.

The census of 1884 shows, in Ontonagon county, of apple orchards 1 acre, 40 bearing trees, yielding, in 1883, 30 bushels of fruit.

Peaches, none.

Total of orchard products, \$36.00.

Garden products sold in 1883, none.

GOGEBIC COUNTY.

Gogebic county was set off from the southerly and westerly portions of Ontonagon, by act of the Legislature, approved February 7th, 1887, and the organization was completed in pursuance of the provisions of such act, by the election of the proper county officers, on the first Monday in April, 1887. At the same election, by the vote of the electors, the county seat was located at Bessemer.

Owing to the very recent erection of this county, no statistics or other information respecting its horticultural character is at hand, such information, as well as its census statistics, being included in those of Ontonagon county.

It is supposed to lie southward of the copper bearing belt, and to include the southwestern portion of the iron region.

ISLE ROYALE COUNTY.

Isle Royale and the adjacent islands which, at one time, had been part of Ontonagon county, were erected into a separate county, by an act of the Legislature, approved March 4th, 1875. The organization was completed, as provided in such act, by the election of county officers, on the first Tuesday in July, 1875.

The sheriff, county clerk and county treasurer, to be so elected, were empowered and required to designate suitable places in the township of Isle Royale for the county offices and the holding of the circuit court, until the board of supervisors shall establish the county seat, which they were required to do on or after the year 1880.

The county was attached to Keweenaw county for judicial purposes. It lies above eighty miles northwesterly from the north shore of Keweenaw county.

The geological characteristics of the islands are unusual. It abounds in deposits of copper; but, as yet, none have been found sufficiently promising to warrant mining on an extensive or permanent scale.

The soil and climate are but illy adapted either to agricultural or horticultural purposes, and much of the sparse population is understood to be more or less nomadic, devoting attention to fishing during the warm season, and abandoning the island during winter.

WINTER MEETING

CONVENED IN THE COURT HOUSE AT THE CITY OF
HILLSDALE,

FEB'Y 22, 23, AND 24, 1887.

COMPLETE MINUTES OF THE CONVENTION; FULL TEXT OF
ALL PREPARED PAPERS; ABSTRACTS OF ADDRESSES
AND REPORTS OF COMMITTEES.

THE WINTER MEETING.

CONVENED IN THE COURT HOUSE AT THE CITY OF HILLSDALE FEBRUARY 22, 23, 24, 1887.

COMPLETE MINUTES OF THE CONVENTION; FULL TEXT OF ALL PREPARED PAPERS;
ABSTRACTS OF ADDRESSES AND REPORTS OF COMMITTEES.

The winter meeting of the Michigan Horticultural Society was called together in the circuit court room at the city of Hillsdale on Tuesday afternoon, February 22d. The attendance from abroad was quite large, but the farmers and fruit growers from Hillsdale county were but sparsely represented. At the request of President Lyon, Hon. Alexander Hewitt, president of Hillsdale County Horticultural Society, presided at most of the sessions of the convention. The following announcement had been sent out some days before the convention and was quite closely followed:

SCHEME OF TOPICS.

TUESDAY—2 O'CLOCK P. M.

1. Reasons for the Decline of Orcharding in Southern Michigan. Led by B. Hathaway, Cass county.
2. History of Horticultural Progress in Michigan, as affected by the State Society and its branches. President Lyon.
3. Suggestions for Local Societies. Secretary Garfield.
4. What can Legislation do for Horticulture in Michigan? L. D. Watkins, Manchester,

7 O'CLOCK P. M.

1. Experience meeting for a half hour.
2. Methods and Results of Grafting, illustrated by stereopticon views. Chas. S. Crandall, Lansing.
3. Commercial Fertilizers: Their Value and Uses. W. L. Snyder, Detroit.
4. Appointment of Committees.

WEDNESDAY—9 O'CLOCK A. M.

1. Best Way to Purchase Nursery Stock. E. H. Scott, Ann Arbor.
2. An Hour with Varieties of Apples for Culture in Southern Michigan. J. F. Fitzsimmons, Hillsdale.
3. The Development and Promises of the Evaporated Fruit Industry. S. B. Mann, Adrian, and H. W. Davis, Lapeer.
4. An Hour with the Worst Insect Pests and a study of Remedies. R. J. Coryell, Hillsdale.

2 O'CLOCK P. M.

1. Fall Exhibits of Fruits: Their Management and Educational Advantages. A. G. Gulley, South Haven.
2. Suggestions Concerning City and Village Horticulture. Prof. L. H. Bailey, Lansing.
3. Economic Market Culture of Potatoes: The Best Varieties. C. A. Sessions, Oceana County.
4. A Discussion upon Potato Deterioration and Experience with the Scab.

7 O'CLOCK P. M.

1. The Forestry Problem. F. M. Holloway, Hillsdale.
2. What can Schools do for Horticulture, and vice versa. Prof. W. A. Drake, Hillsdale College.
3. Ethics of Horticulture. Prof. A. E. Haynes, Hillsdale, and W. K. Gibson, Jackson.

THURSDAY—9 O'CLOCK A. M.

1. Reports of Committees.
2. The Question Box.
3. Discussion on Markets and Marketing.
4. Final Resolutions.

Chairman Hewitt first introduced Mayor Cook of Hillsdale, who welcomed the society to the hospitalities of the city. He said substantially:

In a city like ours, dependent upon a farming community for its growth and activity, we all take a lively interest in rural affairs. The improvement of stock, the development of the orchards, the embellishment of the country command our attention, even although we may be engaged in trade or the so-called professions. We are especially interested in the educational work your society was organized to promote. Our county agricultural society is the best organization of the kind in the State, and has met with the hearty support of all our people; it has done a grand work for our locality, and especially has contributed to the betterment of our agricultural interests.

Our county horticultural society, recently organized, will receive just as cordial support, and we have need of the work it can do in our vicinity, for, with the increased competition in the coarser products of the farm, there comes the desire to cultivate fruits, not only for pleasure but profit. This society will join hands with the agricultural society in years to come and will help to maintain the record of our county in the quantity and quality of its farm products.

We rejoice that you have come in our midst to stimulate inquiry and awaken a desire for the best and educate as to methods of production. We appreciate that with a greater diversity of products there come new enemies to baffle us, and it is with pleasure we call to our aid the scientists that are identified with your society. In our city we have numerous delightful homes, about which have been gathered the newest products of horticultural art. The owners of these homes greet you heartily and will take the liberty to absorb from you all the information they can with reference to the further embellishment of their premises and the best means of adding to the comfort of city life through the employment of the information you are freely disseminating. We gladly welcome you among us, knowing that with all we can do we shall be the gainers by your presence among us.

Following the above welcoming words, Mr. Hewitt said:

Gentlemen of the State Horticultural Society and fellow citizens :

In the interest of horticulture and in behalf of our county organization I bid you welcome to this place. Our land of hills and dales is one of the southern counties of the State, situated a little east of midway between the head-waters of the great lakes Michigan and Erie, with railroad facilities for the transportation of its surplus products in every direction. It is somewhat elevated above the adjacent country, as is evidenced from its being the source of several large rivers that flow from it in different directions. It has a great diversity of soil, changing suddenly from one kind to another, a feature for which Michigan is especially noted. Its inhabitants have opportunities for general agriculture, pomology and gardening probably as good as other localities within the same latitude. The people of this county raise considerable fruit, sell some and use a good deal. In its production they meet with several obstacles, some of which are difficult to overcome, especially the various insects that destroy from year to year so much of our best fruit, and of which we expect to hear considerable said during the deliberations of this meeting.

Fruit growing is profitable financially to those who understand the business and make it a specialty, but in the rural districts generally, where it is carried on in connection with other farm industries, dollars and cents are and should be only a secondary consideration, while the first and best should consist in having an abundant supply for our tables at all times during the year, with some to give away, thus making others cheerful and happy as well as ourselves in the enjoyment of some of the delicious productions of the earth.

We have for a good many years seen the necessity of improvement in horticulture. Great changes have been wrought in our country during the last half century. We know something of pioneer life. It was the object of the early settlers to get rid of the timber, to make improvements, as we used to say, and we did make improvements, sometimes carrying the work a little too far, in destroying the native forests, not thinking then of wind-breaks or trees for shade and ornamentation. The present time calls for work of a different character, such as draining our lands, the removal of fences, painting our buildings, setting out evergreen and deciduous trees for shade and for ornament, planting shrubbery and flowers, and in many ways improving the looks of our premises, rendering them comely and cheerful.

The subjects of horticulture and pomology have received heretofore considerable encouragement from the organized agricultural societies throughout the State. But this was not enough. In view of the fact that the best con-

ducted industries of the country have been seeking organization as a help for the accomplishment of their work, so some of the leading horticulturists of the State thought proper a few years ago to organize also, the result of which we are happy to believe has fostered and strengthened an interest in one of the most noble and pleasant vocations ever engaged in. We are glad of the organization and glad of the outcome of its work, knowing full well that its tendency is healthful, elevating, cheerful and in many ways profitable.

We are glad to meet you on this interesting occasion, and while we, the members of this branch society, and the citizens generally, expect to be instructed and benefited by your work with us in this meeting, we hope and trust that your labor will be agreeable and pleasant on your part. We extend to you all a hearty welcome.

Following Mr. Hewitt's remarks President Lyon arose and said:

We come here with a living remembrance of another occasion not many years ago, when our society was warmly welcomed and when we had one of the best meetings in the history of the society. You are upon the apex of the relief of ground that divides the water-sheds of lakes Michigan and Erie; you have many natural conditions which contribute to the success of fruit growing. One misfortune perhaps lies in the fact that Lake Michigan does not lie to the south far enough to take the sting out of the western winds, but your altitude is in your favor.

We have been growing these many years in the direction of commercial horticulture and rather taking the side of the producer than the consumer. Recognizing the fact that buyers are attracted by form and color, we have been instructing the grower what varieties have the greatest degree of comeliness. But we are brought face to face with the fact suggested by your mayor, that the denizens of our cities are getting interested in horticulture and they demand the best in quality as well as in appearance. I speak feelingly about this matter because I see so little tendency to grow the best. In the realm of competition, cheapness of production has been paramount to every other consideration, hence productiveness has out ranked quality, a meeting like this can educate toward higher standards of excellence.

The forestry question which will be discussed in this convention is one that touches everybody, for our climate is at stake. In my own life-time I have experienced the blighting effects of the idea that was foremost with the pioneer: "How shall I get rid of the trees?" A few are trying to stem this tide of destruction, and inasmuch as horticulturists feel the most keenly the climatic changes effected by the elision of the timber it is but natural that remedial considerations should be brought up at such meetings as this.

While our society in these quarterly sessions aims to aid the localities visited, it is not unmindful that at every visit of this kind strength is gathered unto itself for future endeavor and usefulness.

The chairman now announced the first number on the regular programme as an essay upon

REASONS FOR DECLINE OF ORCHARDING IN SOUTHERN MICHIGAN.

BY BENJ. HATHAWAY, LITTLE PRAIRIE RONDE.

I ask your attention while I shall attempt to point out some of the causes that have been instrumental in producing this barrenness and loss. The

principal among these, as I shall attempt to show, are climate, unsuitable varieties and wrong methods of propagation.

CLIMATE.

"In what" you will ask, "does this small part of the State differ from the rest, where apples have generally been so successful?" You will hear in mind that it is only, or mainly, the influence of the great lake that gives Michigan its advantage in fruitgrowing over those States lying further west—Wisconsin, Minnesota, Illinois and Iowa. It is well known that when the thermometer marks a degree of cold of twenty or more below zero at Milwaukee, Racine and Chicago it seldom goes so low on this side of the lake by ten to fifteen degrees; and, although, as we go inland, the cold increases in intensity, yet it is never (from its being more fully surcharged with moisture, it may be) so destructive to tree-life as the more dry as well as the more intensely cold air of the before-mentioned States.

By referring to the map it will be seen that this extreme lower portion of the State, where the apple crop has so often failed, does not share in the ameliorating and protecting influence of this great, never-freezing body of water, at least not to any extent, particularly at those times when most needed, from the fact that our most trying storms, those that bring the greatest degree of cold, are from the southwest. And you will take notice, also, that those regions where the failures have been most persistent, being interspersed originally with small prairies, approach in character to the larger prairie regions of Illinois, where the cold winters more than twenty years ago cleared out their orchards of most of the eastern-grown kinds, leaving only a few inferior sorts, such as the Willow Twig and Ben Davis, of southern origin—varieties which are their main dependence to-day.

Then, as influencing climate, it may be shown that these regions have been growing more and more bleak year by year, from the cutting down of the rather scanty primeval forests, the protection from which enable the early orchards to bear fair crops, while the lack of this protection and the extreme cold of our recent winters have so injured the trees, when not killed outright, as to prevent the production of fruit, even when there was sufficient vitality left to insure abundant bloom.

UNSUITABLE VARIETIES.

While it is undoubtedly true that the failure of the apple crop in the regions referred to is principally due, as compared to the rest of the State, to the greater vicissitudes of climate, from the causes pointed out above, the climate as such is not unfriendly to the apple if only we have suitable varieties. But many suitable varieties we have not. Varieties to succeed must be as a rule the product of the soil and the climate. At least it can be shown that the varieties succeeding best in any climate, if not produced in that climate, were produced under the same or similar climatic conditions elsewhere.

When this region was first planted to orchards, men set such trees as they could get, such as the nurserymen had to sell or the tree-peddler brought them. If from the east they brought with them their preferences among varieties that succeeded there. Hence it happened that the Rhode Island

Greening, Swaar, Baldwin, Red Canada, Fall Pippin and a score or two of the old sorts found a home in the new orchards, only to prove in the end a disappointment and a loss. While this particular region has suffered in a marked degree the loss of crop after crop from these causes, the more favored parts of the State have been by no means exempt from suggestions of impending failure from the premature death of thousands of trees of the leading varieties and the failure of others to longer produce paying crops.

WRONG METHODS OF PROPAGATION.

The first orchard set out by the writer, over forty years ago, gave him peculiar advantages for observing the comparative merits of the several methods of propagating apple trees, and his long-time experiences as a nurseryman have uniformly proved the correctness of his conclusions from these experiences, that root-grafted trees are unfruitful and not hardy as compared with top-grafted or top-budded trees. He foresaw the impending disaster to the fruitgrowing interests of all the west from this cause alone, and at the first meeting of the Northwestern Fruitgrowers' Association held in Chicago, he gave the first note of warning and presented before the members of that association, mostly nurserymen, the facts of his experience. He then and there prophesied that before twenty years should go by, the unwisdom, not to say the criminal folly, of the almost universal method, that of root-grafts, would be made plain to the dullest apprehension. It was difficult to get a patient hearing upon this subject at that time, as the cheapest method of producing trees was the popular method, as it is still, I believe, in the majority of the large commercial nurseries that supply most of the trees to the west. And this method, it must be confessed, is fostered by the almost universal ignorance of tree-planters, making it easily possible for the tree-peddler not only to impose upon his customers the cheap trees, but worthless varieties as well—varieties that would still be worthless though grown after the best method.

And as to best methods: While the practice is still largely that of root-grafts, the more intelligent planters discard the trees so grown, especially as regards the leading popular sorts, as the Baldwin, Red Canada, Greening, King and many others. The method alone to be safely followed here, and the one approved by the highest pomological authority, is that of grafting on entirely hardy stocks at standard height; and until we have varieties that shall have proved as hardy for our more trying climate as the most hardy of the old sorts have proved in their native home at the east, this is the only method that holds out any promise of success in the future to the fruitgrowers of Michigan, in even the more favored parts of the State.

But nurserymen still hold and will to the cheap methods, until a more thorough knowledge and a more careful practice prevails among planters. Then the cheap trees will go begging—no one will be found to take them as a gift. Then, though the first cost will be doubled, the real value of the trees will be increased a hundred fold. If there are any who feel disposed to cavil and say I put it too strong, let them come with me and go through a score or two of orchards in Cass county that I know all about. I will point them to trees, both of the same variety, one a root-graft the other a top-graft or top-budded tree, the first of which has not borne one-fourth the apples of the other since they were set out, thirty or forty years ago. And I will point them out trees

that, as top-grafts, are hardy and productive, that were planted in the places where root-grafted trees died out twenty or more years ago. And these are not isolated cases, but they are the universal experience in all this region where there has been a fair opportunity for comparison.

There is a neighbor of mine whose orchard of some 700 to 1,000 King trees is now being cut down as cumbering the ground. Ask this man if he would ever plant a King tree again as a root-graft; ask him if he would ever plant a root-graft Baldwin, or Red Canada as a root-graft; or, it might be as well, I think, to ask him if he would plant any variety among our old and popular sorts, any variety less hardy than Oldenburg or the hybrid crab apples of recent origin. And this neighbor had come to his understanding of this subject from thirty years' experience in apple growing, and thousands of dollars lost through wrong methods of propagation alone.

THE REMEDY.

While right methods of propagation of the best of the old sorts still enable us to grow apples in favorable seasons, for years to come, perhaps, it is doubtful if this will be more than palliative of the trouble in this trouble in this region of the State. The real radical remedy must be looked for in the production of new varieties—varieties suited to the more rigorous climatic conditions; and the question arises, "How shall this be done?" Those who are aware of what is being done and what has already been done in this direction by the States of Wisconsin, Minnesota and Iowa, will readily see that our remedy lies in the same line of effort—that of the production of the new varieties of the crab-apple, crossed or hybridized with the most hardy old sorts. Or, what is more promising, perhaps, crossing with the best varieties brought from central Russia in recent years—from those parts of that vast empire whose climate corresponds nearly to that of Wisconsin, Minnesota, and the territories beyond.

The two men to whom the west will owe a debt of gratitude for the frost-proof orchards of the future are Prof. J. L. Budd of the Iowa Agricultural College, and Peter M. Gideon, of Minnesota. Mr. Budd, led by a desire to improve the fruit production of this country, went to Russia some years ago in search of varieties of apple suited to the trying climate of the west, and the great number of varieties he brought home are now being tested by leading fruit-men at the agricultural stations now being established in those States. Mr. Gideon has been experimenting for many years with the crab-apple. He has produced and tested many hundreds of trees grown from seed crossed or hybridized with the best of the old and Russian sorts; and though he has not solved the problem of apples for Minnesota, his labors show a possibility of growing this fruit under almost arctic conditions.

EXPERIMENT STATIONS.

While individual enterprise can do much, and has done much, toward solving the many problems both in regard to fruitgrowing and general farming, we need the intelligent concert of action of many minds and many hands in order to carry forward at the same time a great number and variety of experiments—work that can be done much better by these stations than by individual effort. Do you say "We have the Agricultural College"? True, and

it has done some good work in this direction and as the head, to co-ordinate and direct the work of other experiment stations, could be made still more useful. And such trial stations we must have. If Iowa has need of and supports twelve, can Michigan longer afford to do without any? We need from three to five, and one of these should be somewhere near the southwestern border of the State. And when we have such a station—well supported, properly manned, and duly equipped for its work, the problem as to the production of apples in southwestern Michigan will be in fair way, and far in the way, toward solution.

TIMBER BELTS AND GRASS.

Before closing, and as having an intimate relation to this subject, I wish to urge upon your attention the planting of forest trees, not alone for protection and a means for ameliorating climate, but for the money value as well. Some of you know of the humble efforts made by the writer on his own farm, in this direction, and those who doubt as to the paying nature of such enterprises might do well to look over his 3,000 transplanted forest trees. They would see several hundred maples and pines by the road side, from the former of which have been made sugar and syrup for several years. They would see black walnut, butternut and chestnut trees, grown from the nut, that have borne fruit for fifteen years. They would see in his reserved wood-lot hundreds of spruce, pine and other evergreen trees, a foot in diameter and thirty feet high. They would see a grove of sugar-maple trees, some 700 in number, in one body, some of them ready for the sugar-trough—now valuable, and that may become more valuable for generations. And if every land-owner from here to the Indiana line and west to the lake could be induced to plant a timber belt on two sides at least of every 80 acres, in a few years you could grow orchards anywhere in the country; and from trees duly tested at the agricultural stations, no doubt, orchards as hardy for us as any in any State, and as sure to feed with a generous and luscious bounty the generations yet unborn.

Mr. Lyon: I concur with Mr. Hathaway that the surest way to get the best tree is by double working. I would perhaps give more weight to deterioration of soil; but his notes on the forest are excellent. He is a pioneer in forest culture. I have watched with great interest his experiments in this direction.

Mr. Betts: I met with a misfortune in having a lot of young trees girdled and cut them off and grafted, which is really the same as Mr. Hathaway's double working, and they proved the hardiest and best orchard trees.

Mr. Holloway: My experience corroborates that of Mr. Hathaway. I have got my best trees from top-grafting, and I am satisfied we need to pay more attention to the stocks into which the grafts are inserted. Trees weakened by winter-killing are more apt to be infested with insects.

Mr. Watkins: We are deteriorating in orcharding on account of insect ravages and the effect of fungi.

Mr. Collier: The trouble is, in our old localities, we are thieves; we steal the elements from our orchard soils and put nothing back. Of course the trees become tender and subject to insect incursions, and we richly deserve all the calamities that come to us. We need to feed, cultivate and prune. If we do all this and use ordinary precaution with regard to insects, we shall have reward. Even new orchards are planted upon starved land. No wonder that disaster follows.

Prof. Bailey: Want of care I think is the key-note to the deterioration. I am not quite in sympathy with the expectation of reaping a rich harvest by crossing varieties to secure hardiness. It is a good thing to experiment on, but results are slow. We have not so very many tender sorts after all. We should plant more sorts. The man who plants 99 per cent Baldwins because it is a good market apple will wake up some morning and find he is without an orchard, because the Baldwin is one of the few tender sorts. We can, by trying a large number of the 200 sorts grown in Michigan, get results 25 years quicker than by crossing to secure hardiness.

President Lyon next gave the following paper on the

HISTORY OF OUR HORTICULTURAL PROGRESS AS AFFECTED BY THE STATE SOCIETY AND ITS BRANCHES.

Efforts had been made to organize and maintain horticultural societies in Michigan, though with but transient success, prior to the birth of this society in 1871. People (and horticulturists in common with others) seem to be constituted very much like the farmer's matched team, one of which was willing to do all the work and the other entirely willing that he should do so; but when treated to a feed of grain the latter never failed to do his full duty.

The unwritten history of Michigan horticultural associated effort is replete with illustrations of this tendency, since the meetings of the society are largely attended by persons who do not hesitate to participate in its exercises and exhibitions, compete for its premiums, and otherwise avail themselves of the full benefits of the organization, while neglecting to contribute even the value of a membership fee toward the unavoidable expense of conducting its operations.

The advent of our present State Horticultural Society chanced upon a time when, in response to the growth of the markets of the west, the peculiar advantages of the western shore had come to be dimly comprehended, and a vigorous "skirmish line" of commercial horticulturists had entered upon the borders of the tempting field.

Almost from the outset the necessity of co-operation became obvious, and the pecuniary consideration sufficed to accomplish what a fondness for the refining and elevating influences of horticultural pursuits had failed to do. The infant society was also fortunate in being able to enlist a man as its first president—J. B. Thompson—who, whatever his failings may have been in other respects, was eminently successful in imbuing those with whom he came in contact with his own enthusiasm—with results only accomplished under the impulse of a self-abnegation as rare as it is praiseworthy.

Much as has been accomplished under the aegis commercial horticulture, it can hardly be said to be an unmingled good. Not only has the pecuniary instinct which underlies it, in very many cases, crushed out the old-time genial courtesy of the genus horticulturist, and imbued its devotees with the sharp practices and other money-grabbing tendencies of the marts of trade; but too many have been drawn into the practice of the varied frauds intended to give their wares a seeming, rather than a real value, at the same time acting out the practice of the average farmer of our country by drawing upon their lands without commensurate return, thus entailing sterility under the hands of subsequent possessors, if not, perchance, even upon themselves.

Again, commercial considerations too often so possess the minds of those

engaged in the business as to induce them to plant varieties possessing only the single merit of beauty, with the consequent ability to capture the fancy of ignorant and greedy buyers, by misleading them with the expectation of finding quality associated with attractiveness, thus enacting a falsehood as positively as if actually spoken. Even these, however, are not the only if indeed they are the worst, results of modern commercial fruit-culture. Students, as such men usually are, they too often come to be so fully given up to commercial considerations that in their advice to planters, in their publications through the press, and wherever they have occasion to express their views, all is brought to the test of profitableness; and the person who would plant a tree, even for dessert purposes, is advised to procure a Red Astrachan, a Maiden's Blush, or perchance a Ben Davis or a Pennock, only to find them suitable to take rank with the potatoes and cabbages of the vegetable cellar.

So general and potent has this influence become, that there is much apparent danger that many of the excellent accumulations of the past will be lost to the mass of planters, even if not buried in utter oblivion. The inevitable result is that dessert fruits proper are almost unknown to city markets, so that the demand for such fruits is doubtless but a mere tithe of what it would be if suitable varieties for the purpose could be obtained.

Although the society originally assumed the title "pomological," even those who most persistently objected to its change, have steadily approved of its covering the entire field of horticulture. While with one hand it contributed to the building up and systematizing of the commercial fruitgrowing interests, with the other it promoted the formation of local societies, and through them lent an influence to the growth of family and amateur orcharding; and through its catalogues and its discussions gave wide publicity to such information as it was able to glean both at home and abroad.

But not alone at home is its influence felt. It may fairly congratulate itself that through the exhibition of our products abroad, through the circulation of its transactions, and by the reciprocation of visits with State and other societies, the fruitgrowing capacities of Michigan have come to be generally known and highly appreciated. As an indication of how the work of the society is esteemed abroad, we quote the following from the Michigan Farmer of Jan. 17th last:

"The Horticultural Times of England has the following complimentary reference to the Michigan Horticultural Society in a late issue:

'What is the use of your continually urging on the Royal Horticultural Society to reform itself,' writes one of the fellows of that institution, 'when you know that the reform must come from without, and not from within? The public takes little interest in their shows, and are content to leave matters as they are; and so long as this state of things continues, so long will the society remain as it is. After all, it has done something to popularize horticulture among the masses. Indeed, most flower shows, with their music and so on, also spread amongst the people an elevating taste. Look at the Royal Botanic fetes!' Perhaps the best answer to this statement is the report of the Michigan Horticultural Society, which has reached us. Here is a record of good, solid work, even though the music and fire-works are left out. We have nothing to urge against the recreation of the people—far from it; we only assert that it is not the proper function of a horticultural society to provide it. A horticultural society exists for the advance of horticulture, and it goes out of its way when it attempts to fulfill any other duties. In the United States, though recreation is by no means neglected.

the horticultural societies mean business and do not mix work and play, but work first and play afterward. We are never weary of urging that the horticultural societies of this country should be placed on a practical basis like similar institutions in America. If, for instance, flower shows will not succeed without bicycle races, greasy-pole contests and foot-races, let them not be held at all ; if no practical results accrue from the mode in which our horticultural societies are now conducted, by all means let us change that mode. Mark how America is in advance of us in this direction. At the meetings of the Michigan Horticultural Society, for example, the members do not confine themselves to mere exhibitions, but they contribute papers on practical points, and by free discussion they elicit the opinion of those most competent to give it. Here are the subjects discussed at one of the meetings : Insects, and the way to circumvent them ; plum culture, potato culture, timber protection, fruit improvement, etc. These subjects are well and usefully handled, and the talk is not confined to a few chosen speakers, but is taken part in by the members generally. Compare this with the shows of English horticulturists, and the result is startling. On the one hand practical, useful and instructive meetings ; on the other hand, wholly unprofitable and unpractical gatherings. Surely it is time that the practical horticulturists of this country had a voice in this matter, and that whether by the creation of a new society, the reorganization of those now in existence, or by any other means, British horticulture should be placed on a sound basis. One of these alternatives must be adopted sooner or later. The sooner the better."

In the matter of the improvement of the grounds and buildings of country school districts, some good results have certainly been effected, if only by demonstrating the readiness with which the school may be interested in planting and caring for trees, shrubs and even flowers upon the grounds. This must almost necessarily be an improvement of slow growth ; and important results can scarcely be expected until those in charge of educational matters interest themselves in the work, and especially until the teachers of the State shall acquire the ability to lead and interest their pupils in at least the fundamental principles of botany and horticulture.

Landscape gardening and rural ornamentation generally have received a good deal of attention from the society, with little apparent result. This, however, is a subject demanding so much of judgment, taste and experience, that probably it were better relegated to those disposed to qualify themselves by a special course of study and practice.

The labor of reducing the forest-clad lands of our peninsula to the requisite condition for agricultural purposes has begotten among our people the feeling that forests are an obstacle in the way of improvement, while little thought has been given to their benefits in the modifying of climate and the conservation of moisture. While the society has freely borne its testimony on the subject, it has had little if any influence in staying the hand of either the farmer or lumberman in their persistent raid upon the forests of our State. A few persons here and there have learned, too late, the results of such sweeping destruction, and have commenced replanting as a remedy, with results of the character desired, although such plantations are rare, and the benefits local and as yet imperfect.

The recent legislative enactments in favor of highway tree planting have doubtless been, at least in part, due to the efforts of the society, as was also the designation of our Arbor day ; but there is yet great need to advance public opinion before we can hope to realize their full and legitimate effect.

Following Mr. Lyon, Mr. L. D. Watkins of Manchester read the following notes on

WHAT CAN LEGISLATION DO FOR MICHIGAN HORTICULTURE?

The aim of legislation for horticulture should be:

First, To aid the millions of busy men and women of moderate incomes who know little of the art of landscape decoration and tree planting, but who desire to surround their homes with the greatest amount of beauty possible that their means will allow, and at the same time to grow fruit for constant family supply at the least possible outlay of money.

Second, To establish stations where the difficult problems that constantly surround the expert horticulturist can be solved by combined science and practical information, by bulletins and otherwise, that shall protect from error and imposition as far as possible those who wish to plant trees.

Third, To give us a fruit warden, who shall be a traveling supervisor over all the combined interests of horticulture. Can the State afford this? Let us see what the nations of Europe are doing. Take the six largest, and we find employed in the forests alone over five thousand overseers, each of whom can give the local and botanical names of every tree, shrub or plant, its class and use; name all the enemies known to injure tree or plant, whether they be insects, birds or animals. Europe is justly proud of her botanical gardens, and they are no longer experiments, but considered as landmarks in the horizon of science.

I should be safe in saying that the codling moth alone damaged the apple crop last year enough in each of the counties of Washtenaw, Jackson and Hillsdale to pay for all that I have suggested in this paper. The apple orchards about Manchester are doomed. Many that produced hundreds of barrels for sale are now entirely destroyed. The loss in money is not the greatest. Take from the country the bloom and fruit of our orchards and you have severed one of the strong links that binds a people to the country. Not for one moment let us entertain the thought that horticulture means only the immediate surroundings of our homes. Its jurisdiction is the utmost limits of the earth. In dreary Iceland, in almost every home you find in the shells of volcanic bombs growing some Alpine flower. Our heritage is great, its influence on ourselves and children is beyond estimate, and is transmitted to our children. A child reared amid rustling songs of trees, the beauty and fragrance of flowers and fruits seldom or ever goes astray. We can afford to legislate in the interest of that which means so much to the homes of our country.

SUGGESTIONS CONCERNING LOCAL SOCIETIES.

Secretary Garfield gave a resume of the work accomplishing through local societies in Michigan and took occasion to commend the social nature of several of them. He advocated out-of-door meetings and especially the making of exhibits at each session.

The following note upon this subject was read from Matthew Crawford, of Cuyahoga Falls, Ohio:

MR. C. W. GARFIELD—*Dear Sir*: I almost envy the fortunate individuals who are on the way to your winter meeting. Even at this late hour I jot down my views briefly on "Local Societies:"

Horticultural societies are intended to interest people in horticultural pursuits. Their success in this direction depends largely on the influence exerted by the officers and leading members. They should have almost unbounded faith in horticulture as a means of ennobling the character and bettering the condition of every one who engages in it. They should practice what they preach. Nothing exerts a more chilling and paralyzing influence than to have as a leading member one whose knowledge is all theoretical and who has a reputation in his own town and county for shiftlessness and inefficiency.

Each member should talk up the society, and never talk it down. He should bring the best he has for exhibition, and be able and willing to tell how it was grown. There should be a question box, and each one should use it. The subject for discussion should be known in advance so that all may post up.

Worthy persons should be invited to the meetings, and pains should be taken to give them a hearty welcome and make their attendance a pleasure. The hour or two spent in conversation before dinner is announced may be made exceedingly pleasant and profitable to all. The dinner is an important part of the programme; I can compare it to nothing but a family reunion or a meeting of our Pomona Grange.

These meetings are bright spots in our lives; they increase our number of friends and give us kindlier feelings toward each other; they stimulate us to beautify our homes and to raise more and better flowers and fruits; they increase our knowledge of varieties and methods and give us a higher standard.

A horticultural society can flourish only where there is sufficient intelligence to appreciate a good thing.

M. CRAWFORD.

L. B. Pierce said the Portage County Horticultural Society owed its success primarily to its location in a community of culture, intelligence and refinement, and a judicious selection of officers. By the persistent work of the secretary, its list of members had been kept up to a good number, and this had insured a full treasury, which was a blessing to any society. It had been enabled to purchase about \$30 worth of reference books. It owned a tent costing about \$100, which enabled members with small houses to have the summer meetings, and the society had not been compelled to meet in public halls or on picnic grounds. This meeting at the houses of members from month to month, was not referred to by Mr. Crawford, but it was one of the best means of leavening a county with horticultural leaven, and it familiarized the members with the methods and practices of those who had sufficient faith in their own ways to welcome the members at their own homes. Although the speaker lived 10 miles from the county seat and two miles outside the county, he had found it possible to average an attendance, generally with his wife, of ten meetings per year for the eight years of the society's existence, sometimes driving 25 miles and return. Other members were equally enthusiastic, and at the last July meeting, held at his place, although in the midst of drawing wheat, 175 persons were in attendance. He could not recall an instance where an essayist had failed to respond to an appointment, and the discussions were always well sustained. Intellectual advancement and social intercourse were made the objects of the society, and all efforts to make the the society a seed store or a nursery agency were frowned down.

Several members of local societies followed with glowing accounts of society meetings held under this social plan.

EVENING SESSION.

A communication was read from the State Beekeepers' Association concerning a joint meeting at Saginaw, also a letter with reference to keeping bees near the highway.

On motion both were referred to the committee on resolutions.

Mr. S. Ocomae, of Japan, read a short paper on Japanese gardening, illustrating with four charts as follows:

The Japanese garden is made differently from that of America. Some are covered with green grass and others are not; some are hilly, others flat; and altogether they have no regular shape as a circle or square, since the gardeners attempt to make the views as if they were natural landscape, and such ones are regarded as the highest types by skillful gardeners. They use more shrubs and trees than flowering plants, and rocks which have curious shapes and various colors are indispensable to complete the gardens; they are brought from the different parts of the country, and those which are selected to make a rock in the pond are often picked up from the bottom of a river or a sea, so the rocks are more valuable than the trees.

They make rocky hills about eight feet high (the height is proportional to the size of a garden) and water is constantly supplied to fall from the top of the hill into the pond, passing through narrow ditches which represent brooks.

In the pond they generally make small islands and build a bridge to connect them, and numerous gold-fish or carp in different colors as blue, red, white and dark are kept in it, and they are well trained to come up to the surface when any one claps his hands, and many birds are tamed to stay there. Sometimes they plant a lotus here and there in the ponds.

Every garden has at least one or two pine trees. We call them "Matoo" and which has a figurative meaning "lord of tree," and the people regard the tree as majestic on account of its evergreen.

There are many kinds of the pine tree, but my illustrations are of the most valuable and striking ones.

Mr. Ocomae gave the following description of his illustrations which we are unable to reproduce:

Fig. 1 is the picture of a pine tree called Shembon-Matoo which means "a trunk and thousand branches." It takes more than twenty years to grow fifteen feet high while its trunk is not longer than a foot.

Fig. 2 is called Shidare-Matoo (drooping pine) for its branches grow toward the ground like a weeping-willow.

Fig. 3 is the rough sketch of the front garden decorated with rocks and shrubberies. This is prevailing at present and it is the mixture of the native style and that of Europe.

Fig. 4 is to represent the main garden of common style. The tree by the house is a pine tree and the picture itself would give better idea than the description.

GRAFTING.

Mr. Chas. S. Crandall gave an illustrated lecture on grafting, the substance of which may be found in the State horticultural report for 1886, page 205.

The address was repeated by request, and the illustrations by means of the stereopticon enlivened the text of the lecture and gave a delightful entertainment to the audience.

Mr. Crandall was asked a good many questions to all of which he readily responded.

The next subject treated was

ETHICS OF HORTICULTURE.

BY PROF. A. E. HAYNES, OF HILLSDALE COLLEGE.

In treating this subject I shall assume that it refers to the physical, mental and moral effects of horticulture. As we meet here to-night, on this sacred national holiday, two pictures come to my mind. One is of a home surrounded by a spacious lawn, sloping gently down to the waters of a beautiful river, on whose bosom the busy ships pass and repass, but whose bells forever toll a requiem as they come in sight of this home, dear to every lover of liberty. It is the home of the Father of our Country, more sacred because some of its trees and shrubs were planted and cared for by his own hand. This man of whom the martyred Lincoln said: "Washington is the mightiest name of the earth—long since mightiest in the cause of civil liberty, still mightiest in moral reformation. On that name no eulogy is expected. It cannot be. To add brightness to the sun or glory to the name of Washington is alike impossible. Let none attempt it. In solemn awe pronounce the name and in its naked, deathless splendor leave it shining on." This man, "first in war, first in peace, and first in the hearts of his countrymen," was a farmer and made his home beautiful by the study and practice of horticulture.

The other scene that comes to my vision is none the less interesting, because of its memories. It has an air of neatness and thrift about it, and the well-kept garden bears special marks of its owner's interest. As I look over into its borders I see bending in interest over some of its plants, the form of an aged woman, wearing a sun-bonnet which covers a face that a queen might covet. Aye, she is a real queen; for she is a real woman and the mother of one of the noblest kings of earth. A stately form passes through this garden gate, the patriot LaFayette, the hero of two continents, and with tender awe greets her who rocked the cradle of liberty, Mary Washington, the mother of his loved and illustrious friend.

The history of the world proves that the tillers of the soil are its safeguards. Our great cities would soon be swept out of existence were it not for the fact that they are constantly supplied by the rich, healthy blood, brawn and brain of the country. The wheels of factories, the enterprise and push of mercantile life, the marvelous feats of engineering and a thousand other enterprises depend in a large degree for their future success, as they have in the past, upon the men now born or yet to be in rural homes. The glory and strength of our future statesmanship, too, will rest, as it has, largely upon a similar basis. Who has not been charmed by the descriptions of Monticello, the

country home of Thomas Jefferson, the framer of one of the grandest papers of State that human history has ever known. Who does not remember that Daniel Webster, the matchless expounder of the Constitution, communed with Nature at Marshfield; that Henry Clay, the flow of whose fiery eloquence burned its ways into men's minds like a molten stream of lava, was ever glad to return to his lovely farm home at Ashland; that Abraham Lincoln, the greatest of typical Americans, studied by the light of burning pine knots in the humble log cabin on his father's farm; or that James A. Garfield, our nation's second martyr, loved passionately, to the day of his death, his rural home at Mentor. Yes, Mount Vernon, Monticello, Marshfield, Ashland and Mentor—all, have their sacred memories as well as their lessons of invaluable worth, because the hand of the horticulturist added to their beauty and their refinement. Have you not read how when that prince of English patriots, philanthropists and statesmen, Wm. E. Gladstone, grows weary with his Herculean tasks in Parliament, he retires to the gardens and forests of his lovely Hawarden to engage in manual labor in order to recruit his waning powers? Ancient history, too, furnishes its illustrious examples of a Cincinnatus* leaving his plow for the dictatorship of his country, and of a Roman king† who voluntarily gave up his throne to care for his cabbage patch. In fact, great men in all ages have been like the fabled giant Anteus of old, of whom it is said whenever he touched the earth he renewed his strength, and so his enemies continually tried to keep him from earth that they might crush him in mid air. When weary they have sought the healing balm of mother earth. Is it not a significant fact that so many of the greatest men in all professions have been lovers of nature? The beautiful cadence of Gray's "Elegy in a Country Church yard," the measured beauty of Bryant's "Thanatopsis" or his "Death of the Flowers," Longfellow's stirring words on "The Launching of the Ship," Whittier's simple, charming story of "Maud Muller" or even Carleton's quaint "Farm Festivals"—all these and many more, interest and edify us because their authors found a place close to Nature's heart.

The most skillful artist, whether he be a Michael Angelo or a Raphael, with his almost matchless creations; a Phideas whose conceptions seem to leap into life itself, under the almost divine touch of his chisel; a Shakespeare whose word paintings of the human soul and its passions have yet to be equaled or surpassed by the human mind; a Beethoven whose creations seem to lift the soul to the portals of Heaven itself, or a Demosthenes whose very voice seemed to possess the power to make men either angels or demons—the most *truthful* artist, whether he be painter, sculptor, poet, musician or orator, is he who most accurately interprets Nature.

The greatest master of the English language said that mercy is twice blest. But horticulture brings a four fold blessing, at least, for to him who engages in it, it brings health to the body, rest to the weary mind, and inspiration to the soul, while its reflex action blesses his neighbors. The proper care, either of a vegetable garden, a flower garden or of a lawn—each or all together furnish healthful exercise for body, mind and soul, and every home should have at least one of them, if it be only a window garden in summer and potted plants in winter. Whatever makes home more beautiful, more enticing within or without, is not only a blessing to its inmates but to all who look

* Size of Cincinnatus' farm, 4 acres. [See Barnes' General History, p. 221.]

† In 305, A. D. both emperors resigned the purple. Diocletian amused himself by working in his garden and when Maximian sought to draw him out of his retirement, he wrote, "If you could see the cabbages I have planted with my own hand, you would never ask me to remount the throne." [See Barnes' General History, p. 263.]

upon it. Horticulture will do this, therefore it is a blessing. How often one thrifty garden or carefully kept lawn will cause the owner of every home in the neighborhood to make his surroundings more beautiful. In the keeping of a garden one may have bad luck, and like Dudley Warner, lose all the financial gains and grow weary in body by fighting "pussly," that "type of original sin;" and yet be richly paid for all his time and pains, as he was, in the healthful meditations to which it gives rise.

How like a garden is the human heart. How as in heart culture, do we have to constantly strive to eradicate the evil. But, conquered at last, what a rich fruitage it bears. How like the century plant are some lives that live on for years, gathering the power and elaborating the material that finally blossoms forth in blessings on the world. How some lives, like the oak, buffet the storms and grow strong by the very resistance they are compelled to battle. How other lives, like the climbing vine, can only reach the pure sunshine and light of Heaven as they cling to some stronger life. How still others too, too beautiful for earth, like the morning glory, last but for a day—smile once and die. I pity the one who cannot gather moral, mental and physical strength from the teeming plant life about him. I was crossing the college campus a few days since passing under a large oak tree, found to my surprise that hundreds of acorns lay beneath it and that nearly every one of them had, last fall, sent down a vigorous root into the earth and each was only waiting the blessing of warmth and sunlight to build a tree. Each had done *its* part and was prepared to accept what the God of Nature had in store for it. Ah, thought I, how well it were if men would get ready with equal faithfulness for the success God vouchsafes to such promptness to duty. Again I thought how much this acorn resembles a proper course of study in college or elsewhere. It should be simply the well rooted acorn from which shall spring the giant oak of a wise, grand and helpful manhood.

I would encourage the cultivation of flowers *especially by all*, as a means of moral culture and of blessing to others. The earliest recollections of my precious mother are associated with them and they are intertwined with a thousand blessed memories of her noble, self-sacrificing life. She was never too busy to neglect the care of them about our humble log home when I was a child and, even now, in her old age, she still cares for them both in and around the old homestead. She early taught me to love them as one of God's greatest blessings, and both home and mother were made dearer and life had less of temptation because of their presence. They still form one of the brightest spots in my memory of the dear old home and its inmates.

It has been said that music is the only art of earth that will be able to pass the sentinel angel at the gates of Paradise. I have often thought that Heaven would be incomplete and that my mother would be lonely there without flowers. We plait them in the hair of the fair young bride; they bless the sick-room by their presence; we place them on the casket of the silent sleeper; we plant them on the graves of our loved ones; we scatter them above the forms of our heroic soldier-dead.

Flowers, emblems of the soul,
 Looking with beautiful eyes,
 Turn the thoughts of the erring man
 To his home beyond the skies.

They die when the cold winds blow
 And the year is in its even,
 In the spring they bloom again,
 So shall the soul in Heaven.

Beautiful flowers that spring from your tomb,
 Beautiful flowers that burst from the sod,
 Ye lift the mind to its heavenly home,
 Ye thrill the soul with thoughts of God.

Even Christ, the matchless Teacher, used the familiar truths of horticulture to illustrate some of the grandest and most glorious teachings ever penned by inspiration. Horticulture is like the religion taught by this one "who spake as never man spake,"—in order to receive its full benefits we must honestly and faithfully practice it.

Wednesday Morning Session.

The first topic of the morning was

BEST WAY TO PURCHASE NURSERY STOCK.

Mr. E. H. Scott made the following points:

1. Take one or more good horticultural papers.
 2. A *live* man advertises. Study the advertising columns and send for catalogues.
 3. Inquire of bank located at town where party you think of purchasing from resides, as to reliability, etc., enclosing stamp for reply.
 4. Be sure what kind of fruit you want.
 5. Find out what varieties of the kinds of fruit wanted do best in your locality.
 6. Go slow on new varieties. Do not purchase a variety largely on account of its looking beautifully on paper. New fruits are not likely to be under and are likely to be over-estimated. A large number of old varieties, if given the same care given to new, would far exceed them. I do not wish to discourage buying new varieties, but rather encourage it—only, test before buying largely.
 7. Do not buy stock because it is cheap. Cheap prices generally mean cheap stock. Nurserymen do not mean to work for nothing any more than other business men.
 8. If you pay first-class prices insist that your stock be first-class in every respect.
 9. Have your stock packed properly even if it should cost a little more.
 10. Examine immediately on receipt and if not as represented have the matter righted at once.
- Mr. Lyon: A man who pays good money should get good stock, and the

nurserymen who grows the best stock can not and ought not to be expected to compete with those who follow careless methods of propagation.

Mr. Garfield: Ought the question of latitude to be made prominent in selecting a firm with whom to deal in the purchase of nursery stock?

Mr. Scott: I would pay little attention to this if the stock were well grown. I would not buy apples more than two years old, peaches, pears, plums and cherries one year old.

Prof. Bailey: I know orchards on the west shore planted with stock from Cincinnati that have done admirably, and many other instances occur to me illustrative of the point that latitude makes little difference. I wish to emphasize the point made by Mr. Scott that the orchardist who purchases nursery stock can not afford to be without our State horticultural reports and one or two of our best periodicals devoted to the growing of fruit.

Mr. Davis, of Lapeer, advocated the planting of older trees if they can be secured near at hand, and especially if the planters can dig their own trees. He had himself planted six-year old grape-vines and gathered a fine crop of fruit the first year.

Mr. Pierce, of Ohio, also gave a similar illustration with regard to apple trees, but questioned the desirability of practice in this direction.

Mr. Scott said that large stock was not liable to be as healthy after transplantation.

Mr. E. A. Long, of Buffalo, said: The question turns upon ability to handle and care for stock in its removal, especially the conditions imposed between digging and planting out.

Mr. Watkins: I have transplanted a great many trees of all sizes and ages and much prefer young trees if the best results are to be secured. Of course we plant out large trees for immediate effect in ornamenting premises, but we do it at some sacrifice.

Mr. Lyon: The least shock is produced in the removal of young trees. I would not hesitate a moment in getting trees very far off in latitude if they were healthy. The shock from rich to poor soil is to be avoided if possible.

Mr. Collier: Old trees have been a great damage to our orchardists; two year trees are old enough. I want my trees young enough so I shall do all the shaping of the top.

A number of other experienced orchardists gave their testimony in favor of planting out quite young trees, unless one is transplanting on his own premises where exceptional care can be given to the removal.

The next subject was the

DEVELOPMENT AND PROMISE OF THE EVAPORATED FRUIT INDUSTRY.

BY S. B. MANN, OF ADRIAN.

Mr. Mann said:

Early in the year 1870 I read in an eastern paper the report of experiments in the art of preserving fruits and vegetables by what was then called pneumatic evaporation. The old methods of drying fruits are too well known to need description. The result was a discolored, tasteless product, covered thickly with a sort of skin or crust, and that in turn covered with dust and fly specks. This new invention claimed to extract simply the pure water contained in the fruit, leaving all the other properties of color, flavor, etc.,

intact, and that when water had been again added the fruit resumed its former qualities and proportions; and further claimed that it was thoroughly preserved for any climate or length of time.

I believe from much experience in the business, and many tests, that the claim has in part been sustained and really a larger proportion than is usual for new and great inventions when first put before the people. Especially is this so in the case of apples. The beautiful specimens made were the marvel of all who saw them, but all such things meet with their obstacles, and the one in the way of this was the expense to make the preserved product so as to get it into general use. It was further found that only a few varieties of apples could be treated in this way, on a large scale, without the discoloring of the fruit, and also when factories were put into operation the fruit would come in with all the known varieties mixed, and at the price paid would not pay the farmer for sorting. Hence the product would be turned out in all shades of color; and for a while this came near ruining the business.

Finally it was discovered that brimstone burned in a way to pass the fumes through the fruit, either before or while being dried, would bleach it out white in color. It was at first rejected on the ground of being unwholesome, but chemists came to the relief by saying it was not—of the truthfulness of which I have grave doubts. However, it has been accepted by the public, which has in a great measure become indifferent about the adulterated compounds put on the market for food, provided they look nice and are cheap. The great importance of this industry has led to very many innovations, the object of which has been to cheapen the product and make the production practicable. This subject does not call for the designation of any one of the many processes now employed as better than others; but I may say there are very many which do produce very fine results and the end aimed at, cheapening the product, has been largely successful.

I am constrained to add, however, that except apples and peaches there are very few fruits or vegetables that can be profitably handled by any of the processes that have yet come under my observation. There is one method I am at liberty to speak of, for the benefit of the ladies present. This is it: Slice the apples across the grain (or core, say) very thin; spread the slices thinly on a plate or clean board; cover this with a thin muslin cloth and expose to the hot sun and it will give you a dried apple quite equal to any made by the evaporator. The point is simply this, to draw out as rapidly as possible the water without coating over the surface, as is done if exposed to the sun or artificial heat direct. The vapor thrown off from the fruit is held by the cloth, making the same humid atmosphere around the apple that is made by the methods used by the evaporator. The drying in a moist atmosphere keeps open the fruit cells and the water is allowed to pass out freely from centre to outside of the slice.

The promises of this valuable industry are good. The fruit is now nearly established on the markets of the world as staple goods, and the fact also established that the large surplus of Michigan orchards may be worked up with profit.

With the natural instinct, "a burnt child dreads the fire," I cannot counsel my fellows to engage in this business without great care and deliberate investigation. Many are the fortunes lost, up to this date, in the development of this business, and at the present outlook it still promises to be one of the

easiest routes to bankruptcy if not handled with consummate skill. But I do not believe it is an industry to be checked or lost, for the importance of it is too great. It is to be classed among the great inventions of the age and a few years more will find it thoroughly simplified, perfected and in general use.

H. W. Davis presented the following as questions of vital importance in evaporating fruit commercially:

1. Which is more profitable, to make "rung" or "punched" stock?
2. Which is better, to bleach in the tower or cold bleacher?
3. Is it necessary to use the salt bath?
4. Does it pay to make a commercial product of the waste at $1\frac{1}{2}$ to $1\frac{1}{2}$ ¢ per pound?
5. Shall we sell our products direct to wholesalers or through commission houses?
6. Which is the cheaper and safer fuel, coal or wood?
7. Is kiln dried fruit equal in quality to tower dried fruit, and what is the difference in cost per pound?
8. What number of pounds of green fruit constitute a legal bushel?
9. Where can insurance be obtained?
10. Where can we obtain accurate and reliable information concerning the apple crop in various parts of the country so as to know whether to sell or hold our stock?

Mr. Collier: What about steam heat for evaporating?

Mr. Mann: My experience has all been with the Alden process. The object is to keep the fruit in moist atmosphere during evaporation.

Mr. Davis: If large orchards are planted we need a place to put the product at a profit. Windstorms come and put the crop on the ground and it is lost. The evaporator solves the problem, and it has come to stay.

Mr. Collier: Can evaporated fruit be kept over?

Mr. Davis: I have six years' old stock. It has lost its whiteness, but its quality is not materially injured, but the discoloration takes away the market value. Carrying over even one season puts the best fruit into second class.

Mr. Collier: How about quality of fruit evaporated?

Mr. Davis: Fine appearing stock, regardless of quality, catches the market.

Mr. Mann: We sealed up stock in paper sacks and kept it years without any deterioration, but this fruit had not been bleached. The bleaching makes all stock look alike, hence I don't like the process. I want good fruit to begin with to make an evaporated article that I will use myself.

Several gentlemen spoke of the desirability of accurate crop reports to aid the orchardist and evaporator to settle upon prices. Others scored Mr. Davis sharply for not making mere of quality in stock to evaporate.

The next subject taken up was

COMMERCIAL FERTILIZERS—THEIR VALUE AND USES.

BY W. L. SNYDER, OF DETROIT.

This is an important, though not the most pleasing of subjects, but I assure you it is far more agreeably handled on paper than otherwise. Yet after all it is a matter of habit, education and taste (or smell rather), for the cannois-

seur in fertilizers revels in the inexhaustible field of perfume, as a gardener among his roses, for there he finds the "friend that sticketh closer than a brother."

The program of this meeting brings for your consideration numerous and varied forms of the pleasing developments of horticulture, including even "The Ethics of Horticulture." Hence it is fitting that in the beginning we should strike at the root of the whole matter by a generous application of our attention to the subject of commercial fertilizers. (Feeling a lack of knowledge in regard to this important and growing branch of industry, I wrote to Dr. Caldwell, of Cornell university, asking him to recommend to me some book or pamphlet on Fertilizers, their application, use, etc. His reply was, "There is not such a work in the English language.") Hence I have been obliged to fish for information, wherever there was the shadow of a stream.

In order to understand the value and use of a fertilizer, let us glance briefly at the composition of plants, and what they require as food. Chemical analysis show that plants are composed of water, organic and inorganic elements. The organic elements are carbon, oxygen, hydrogen and nitrogen. The inorganic elements are phosphorus, potassium, calcium, magnesium, sodium, iron, chlorine, sulphur and silicon. In order that the plant may fully develop there must be an adequate, accessible supply of each of these elements, for the plant can not change one of these substances into another, nor can it use one in place of another. The carbon, oxygen and hydrogen of the organic elements are abundantly supplied to the plant from the air, while the nitrogen and all of the inorganic elements must be obtained from the soil. The poorest soil will supply an abundance of sodium, iron and silica, and generally a sufficient amount of sulphur and chlorine for the complete growth of all plants.

Now if we could thus easily account for the rest of our family, the caretaker of these erring children, the much abused fertilizer, would rest undisturbed in oblivion to-day. But we feel thankful that these six, magnesium, sulphur, calcium, potassium, phosphorus and nitrogen, are the only unruly elements we have to deal with and that even these may be coaxed into submission by a wise use of manures and fertilizers.

The first three of these, magnesium, sulphur and calcium, require but little notice, although they are generally present in the fertilizer, especially if it is a superphosphate, yet they do not concern the analyzer, nor do they figure in the estimated value of the fertilizer. In superphosphates and all bone fertilizers there is an abundance of magnesium to supply any want there may be in the soil for this element.

The second, if any sulphur is needed by the soil the fertilizer will be able to meet the demand, it having obtained a supply of this element from the animal matter of which the fertilizer was made, and from the sulphuric acid used in the process of manufacture.

The third, calcium, is a chief constituent of the bones and minerals from which fertilizers are made; a large amount is therefore present in the manufactured product. If this element is still lacking, after the use of the fertilizer, it may be easily added by an application of plaster or lime.

The three remaining elements of plant food, potassium, phosphorus and nitrogen, increasing in importance in the order in which they are named, form the invincible triumvirate that dictates the bounds of all vegetable

growth, and thus controls indirectly the markets of the world. Upon the presence of these three substances the value of all commercial fertilizers depends. The least important of these three is potassium. Its value depends largely upon the quality of the soil and of the crop to be produced. While in heavy soils there is generally a sufficient amount of potassium present for the use of most crops, in light soils the quantity is nearly always deficient. If you have a good, heavy clay soil and can add plaster and work it thoroughly, or if you have plenty of good wood ashes to use, and if you are careful not to continue to crop with plants that use up a large amount of potassium, you might thus far starve out the best fertilizer company in the world. In regard to settling the question of growth with most crops, the business portions of the triumvirate firm are phosphorus and nitrogen, but they form a diumvirate that stands ready to make a corner on every spear of grass or grain, every stalk of corn and even every pumpkin vine that the farmer attempts to raise.

Phosphorus is one of the most important elements of plant food and one which is generally present in the soil in a comparatively small amount, hence in a good fertilizer there should always be present quite a large per cent of phosphorus, yet the amount of phosphorus present does not determine its value, but the proportion of this amount that is in such a form that the plant can use it. Fine bone meal and guano supply this element in such a form, but coarse bones and mineral phosphates must first be treated with acid, which converts them to their soluble form and the fertilizer is then called a *superphosphate*. When the fertilizer has stood for a time, or after it is applied to the soil, some of the soluble phosphoric acid becomes insoluble in water or changes to a form that is called reverted phosphoric acid. When the treatment with sulphuric acid has not been thorough, there is some insoluble phosphoric acid left. We then have in every fertilizer three forms of phosphoric acid. The soluble, the insoluble, and the reverted. The soluble and reverted are of about equal value and are together called available phosphoric acid.

Last but not least is the nitrogen, the most valuable element of plant food and the one generally soonest exhausted in the soil. Although the air is 4-5 nitrogen, yet the total supply of this element to the plant must come either from the ammonia or the nitric acid, or the organic nitrogen found in the soil. The ammonia and the nitric acid are the active forms, while the activity of the organic nitrogen varies greatly, depending on the combination of the elements present. The ammonia and organic nitrogen are the forms in which the nitrogen is found in the commercial fertilizer.

Thus far we have noted the chemical value of commercial fertilizers as plant food. Let us now notice briefly the intrinsic or actual money value of the fertilizer. It is a popular and wide-spread idea that a commercial fertilizer is an extremely doubtful mixture of all those substances that could be used for no other purposes in the world, and it is not doubted that there is possibly present in the mixture a little guano, a dead horse or two, a small quantity of very short cigar stubs, a few pounds of waste leather, greasy rags, oyster shells and an exceedingly large amount of sand, and that the whole process is a mine of wealth for the manufacturers. There may have been foundation for such an idea in the fertilizers of the past, but a company that should attempt to manufacture a fertilizer of that description to-day would be exceedingly short-lived. The legislatures of nearly every State, gaining wisdom from past experiences, have passed laws relative to the manufacture, composition and sale of commercial fertilizers.

The following are in substance the main points in the Michigan fertilizer law, passed in 1885, and are operative for all fertilizers the retail price of which is over \$10 per ton: 1st, That a labeling bearing results of analysis shall be attached to every fertilizer offered for sale. 2d, That a sealed package containing a fair sample of each brand of fertilizer on sale shall be deposited with the secretary of the Board of Agriculture. 3d, That a license fee of \$20 shall also be deposited with the secretary for each such brand offered for sale in the State. 4th, That an analysis of each such brand shall be made at least once a year. 5th, That the Board of Agriculture may at any time authorize an analysis to be made of any fertilizer, that the results of such analysis may be compared with those on the label. 6th, That a fine of not less than \$100 shall be imposed for the first offense in violating this law, and \$300 for the second offense. These fertilizer laws are thoroughly appreciated by all honest manufacturers, and to-day you may feel assured that you get what you buy in the fertilizer line.

Now, what do you buy? This depends of course on the kind of fertilizer, but in an ordinary superphosphate you will get from 8 to 11 per cent of available phosphoric acid, worth by Kentucky estimates 11 cents per pound, (and $\frac{1}{2}$ to $1\frac{1}{2}$ per cent of insoluble phosphoric acid worth 5 cents per pound,) or together worth \$22 per ton. This phosphoric acid the manufacturer has added to the fertilizer, not without cost, by the use of tankage, which from sugar refineries contains about 12 per cent of phosphoric acid and costs about \$14 per ton. Waste black from sugar refineries, costing \$20 per ton, or bone black dust worth from \$40 to \$60 per ton, and containing about 35 per cent of phosphoric acid. Mineral phosphate containing 25 per cent of phosphoric acid and costing about \$6 per ton in the insoluble form, or \$21.30 per ton in the soluble form. This same superphosphate will contain also about 2.8-10 per cent of ammonia, worth $16\frac{1}{2}$ cent per pound, or \$9.24 per ton. The nitrogen of this ammonia was obtained from the tankage previously mentioned, or from sulphate of ammonia, which costs about 24 cents per pound. There will be present, too, in the superphosphate about $2\frac{1}{4}$ per cent of potash, worth 5 cents per pound, or \$2.25 per ton. The potash is generally obtained from muriate of potash, costing about 4 cents per pound. The commercial value of this fertilizer by the above estimates would be about \$33.50. It is useless for me to say that the phosphorus, nitrogen and potash must all be added to the fertilizer before they will be found in it by the chemist who analyzes the sample. Nature is never cheated in the realm of chemistry, though many appear to think so.

Let me add in closing this portion of the subject that the price per ton is not important if the analysis gives an equivalent value, in fact, if the analysis gives the equivalent the higher the price (within certain limits) the better for the purchaser; that is, one ton of an article yielding 20 per cent of an available phosphoric acid, at a cost of \$50 per ton, is relatively cheaper than two tons of a ten per cent article at \$25 per ton, for the purchaser saves the expense of manufacturing, shipping, hauling and applying the extra ton, and also the manufacturer's profit on two tons instead of one. (In England higher priced fertilizers are generally used.) It is a too common idea in America that as long as "it is only a fertilizer anyway" the cheaper it can be purchased the better. However successful dishonesty may be in other affairs you can't cheat your soil or your crops one iota in regard to what is food and what is not. Further, it is always the universal experience that whenever a good fertilizer is used at least its cost will be returned to the far-

mer in the increased value of the first crop, and the increase in the succeeding crops will be pure profit.

We notice thirdly the value of commercial fertilizers as compared to barn-yard manures. We have already seen the foods that must be artificially applied to the soil were potassium, phosphorus and nitrogen. How does the amount of these foods present in one compare with the amount present in the other? Take for instance an ordinary well-known fertilizer, the Homestead superphosphate. An analysis shows it contains:

Available phosphoric acid.....	10.62	per cent
Potash.....	3.94	"
Nitrogen.....	3.12	"

Dry stable manure contains:

Phosphoric acid.....	1.04	"
Potash.....	2.64	"
Nitrogen.....	2.21	"

And one pound of the above superphosphate is equal to 75 pounds of this stable manure when in the wet form; further, the one pound of superphosphate is much more easily handled and applied, and hence is actually worth about 100 pounds of stable manure.

A farmer or market gardener buys manure in a city three miles distant at 30c a load and thinks he is making a bargain. At this rate a hundred tons would cost about \$40. It would take at least 25 days for one man and team to haul and thoroughly apply the manure, and at a cheap rate of \$2 per day would amount to \$50; total cost of this manure would then be \$90. A ton of fertilizer equal in value to this manure can be purchased for \$38.00, and it will not cost to haul and apply this ton more than \$5; total cost of fertilizer then is \$43, or less than half the cost of the manure. To be sure there may be some mulching qualities in the manure not to be found in the fertilizer, but the almost universal, scientific and practical idea to-day is that thorough cultivation is the best mulch. A fertilizer will in no way hinder this operation of stirring the soil, at the same time its own value will be enhanced thereby. (The results of analysis of the dry manure here used were taken from the works of that eminent agricultural chemist, Dr. Ville, of France.) Practical experiments on the use of fertilizers and manures at the New Jersey experiment station shows nearly the same difference. On corn one ton of superphosphate at a cost of \$30 per ton gave the same result as 115 two-horse loads of fine barn-yard manure at a cost of \$173, while on clover one ton of superphosphate equaled 64 loads of manure; on wheat 82 loads; on potatoes 81 loads, and on oats 76 loads.

Again, the relative value of barn-yard manure and commercial fertilizers does not depend wholly on the amount of available food present, for the great question of application to the soil must be considered. It has always been a question of debate among farmers and horticulturists as to how, when and where to apply manures. One would plow it under 12 to 14 inches deep where there will be no danger of its rotting, and very likely the plant will wear itself out trying to find this food, and by the time it has found the place where the manure ought to be the latter has quietly eloped with Miss Rain Water for the next county. Another farmer would leave it on the surface to load every passing zephyr with the phantoms of its departing life.

Still another draws it out and enriches a spot here and there beneath the piles that have been allowed to stand a month or more. So take it all in all it is an exceedingly difficult matter to apply barn-yard manure evenly and to place it in the soil just where it will do the most good.

The farmer who uses a commercial fertilizer finds no such difficulties besetting his labors, for it is a comparatively easy matter to drill the fertilizer in at the time the grain is sown, or it may be readily sown broadcast and then dragged in. The question of depth is not important, anywhere from $\frac{1}{2}$ to 8 inches will do.

In planting grain or seeds of any kind a little care will place the fertilizer just where it will do the plant the most good, and the proper amount can be used, since the food is homogeneous, every spoonful having exactly the same composition as every other spoonful. This is the most commendable feature of a commercial fertilizer as plant food. Again, while a barn-yard manure unless well rotted is slow to act, and often comes struggling in with a vigorous but frost-bitten growth in the autumn, the commercial fertilizer with the true, pushing, wide-awake, American spirit, has set about its work in the morning of the plant's life, and maintaining the vantage ground thus gained, carries off the laurels at the winning stake in a well developed, fully matured and early ripened crop. Then again, the farmer of to-day draws from the village a quart of vital weed-seed with every load of manure and scatters it broadcast over the field. To-morrow he shouldered his hoe and from morning's dawn to evening's darkness with perspiring brow, he fights his inveterate foe the weeds. Day after day the battle wages, yet still with the gathering in of the harvest enough weeds have escaped his battle ax to abundantly seed the soil for a renewed conflict the next year. The farmer of the future, with his load of commercial fertilizers applied in the spring, during the hot days of summer, while sitting on his porch, will gaze

Upon dark fields of waving green,
Where not a festive weed is seen.

THE USE OF COMMERCIAL FERTILIZERS.

In several of the leading experiment stations in the United States thorough and exhaustive experiments extending through a series of years have been tried to determine if possible the effect of commercial fertilizers on the growth of all agricultural crops. The results show that all crops, without exception, are benefited by the use of these fertilizers. The experiments of the New Jersey experiment station show that the yield of wheat was increased nearly 300 per cent, or $21\frac{1}{2}$ bushels to the acre, by the use of 350 pounds of superphosphate. The cost of the fertilizer was \$5.25; the value of the increase was \$17.25; profit per acre \$12. The same series of experiments show that corn was increased 18 per cent, and clover 20 per cent. These figures are valuable, however, only for that particular locality; in other places of the United States with different soil and climate the increase in the crop might vary all the way from 0 per cent to 500 per cent, and it is not wise for any fertilizer company to claim any particular increase in the crop by the use of a certain brand of fertilizer, for the farmer may use the fertilizer and not get the claimed increase, and forthwith the fertilizer and the company that manufactured it are condemned as a fraud, while the company may be strictly

honest and the fertilizer contain just the amount of plant food that is claimed in the guaranteed analysis.

The only safe plan is in a small way to try the different brands of fertilizers on your special soil, and then select the one for general use that gives the best results for you; do not stop with a single year's trial, for circumstances have a peculiar habit, known only to them, of altering all cases. The method of application has to some extent been given under the comparative value of manure and fertilizers. They should always if possible be worked into the soil. If applied to grass lands, sow when the ground is moist, or just before a rain. It is best not to put the fertilizer in any considerable amount directly on the seed or plant.

THE AMOUNT TO USE.

From 200 to 300 pounds to the acre is sufficient for most crops, while for crops planted in hills, a teaspoonful to the hill is the average amount to use; but with these latter crops it is better to sow part of the amount to be used broadcast and drag it in before the ground is planted. It is better also to mix that which is used in the hills with the soil, though it may be applied to the surface as you do ashes or plaster. All small fruits are wonderfully benefited by the use of the commercial fertilizer. For fruit trees from two to three quarts are usually sown about the roots of the tree; for grape-vines, from a one-half pint to a quart is used.

The question may be asked, is there any danger of injuring or exhausting the soil by the use of commercial fertilizer? As Dr. Kedzie puts it, "As we fear that a horse will starve, because he has oats in his food." Yet there is a possibility, yes, and a probability too, that by the continued use of an incomplete fertilizer through the increased growth of the crop, you will sooner exhaust the elements of the soil which are not applied to the soil in the fertilizer. For instance by the use of phosphoric acid alone you will increase the production of the crop, but this same increase will call for more nitrogen and potash; in other words, you get the same amount of crops and use up the soil supply of nitrogen and potash in ten years, that it might otherwise have taken 15 years to exhaust. Yet there is but little danger from this source. The wise farmer or gardener will ever study the condition and appearance of his growing crops, as a good physician studies the symptoms of his patient.

A little observation of the appearance of the different crops that are from time to time grown on a particular field, will reveal what element of plant food is especially lacking in the soil of that field. For example, if the wheat crop is poor, while the pea crop is vigorous, the soil lacks nitrogen; if the reverse is true, add to the field potash and phosphoric acid and perhaps other of the mineral foods. By a little study in many ways the plant will make its wants known.

The question may also be asked, can not the farmer or the gardener manufacture his own fertilizers? The answer is, he can; so can he make a rake or a wheel-barrow, but in most cases it is impracticable and unprofitable work. If the soil lacks potash, he can easily buy muriate of potash; if it lacks nitrogen, nitrate of soda may be purchased in any village. But in each case it will be somewhat difficult to apply the food in this concentrated form. Does your soil lack phosphorus? (which it generally does) you can not so readily obtain this element of plant food in an available form. You can however, by send-

ing to some fertilizer company or through some local agent purchase fine bone meal, containing about 20 per cent of available phosphoric acid at a cost of from \$30 to \$40 per ton. Another way is to dissolve the bones that you may collect with sulphuric acid. But by the time you have pounded up the bones without suitable apparatus, by the time you have dissolved them in sulphuric acid that has cost 2c per pound, by the time you have ruined one suit of clothes with the same acid, and by the time you have made a poor fertilizer of a good pair of boots, you will have wisely concluded that it is better to send all the materials to a good fertilizer company and have them manufactured at a cost of \$2 per ton, or more wisely still, that you will save the freight on the substances one way and purchase the fertilizer of the company ready manufactured.

From the fact that the commercial fertilizer has proved itself such a friend to the husbandman, especially of the older northern States and nearly all of the southern States, that it has made its power felt, that it has developed qualities of usefulness that it was not believed it possessed, from all these facts it might be expected that the fertilizer industry would develop rapidly, and so it has. Twenty-five years ago the industry was in its infancy. To-day over \$30,000,000 of capital are employed in the manufacture of commercial fertilizers which turns out yearly over 600,000 tons of the manufactured product. The amount yearly used in the different States varies all the way from 70,000 tons used in Pennsylvania to only a few tons on the rich western prairies. Michigan uses as little as almost any State in the Union, and thus far the amount used has not paid the fertilizer companies for the cost of advertising in the State. We *do believe* that commercial fertilizers might be used to great advantage and profit on thousands of Michigan farms and gardens. And it is with growing apprehension for the future welfare of these tillers of the soil of our own cherished State that we note the fact that in so many counties the practice of raising some special crop is gaining ground, for by this repeated cropping draft after draft is made upon the soil until it fairly groans under the torture. Among the worst of these is the great potato industry that is fast assuming such prominence, and which will soon drain the best soil of all available potash. I do not anticipate nor hope that the millennium of wealth, comfort and ease will come to the farmers and horticulturists of this State through the universal use of commercial fertilizers. But without a doubt a more wide-spread, judicious use of this kind of plant food will bring to the farmer and gardener of Michigan

“More of comfort, less of care;
More to eat and more to wear;
Happier homes and faces brighter,
All their burdens rendered lighter.”

The paper was discussed by Messrs. Watkins, Pierce, Coryell, Holloway and Baker. The experiences were so varying with regard to the use of commercial fertilizers that no one could formulate an opinion based upon the statements made; all agreed, however, that the superphosphates were well calculated to give plants a running start in life, and shortened the period of maturing.

The secretary read the following note which closed the morning session:

While it may be a question with farmers whether it will pay to use com-

mercial fertilizers or not, there can be no such question with intelligent horticulturists. All that we receive for a crop above cost is profit, and the only way to get more profit is to reduce the cost or increase the selling price. The latter we can not do. We may, however, reduce the cost by raising better crops with the same labor and on the same area. In order to do this we must make the land richer, so that our labor will produce two or three times the crop, and perhaps ten times the profit. Stable manure will do this, and if one has enough of it he will need little or no commercial fertilizer. There are times, however, when it would cost less to purchase and apply commercial fertilizers than it would to apply stable manure if one had it in the yard. Ten pounds of nitrate of soda, worth 30 cents, may be worth more in raising celery plants, or some early vegetable, than two loads of manure. Sometimes a person is obliged to plant a crop on land that he can not manure at the time. His only chance in such a case is to apply some commercial fertilizer which may enable him to raise a paying crop. When one wants to apply plant food with a view to getting most of it back in the first crop, commercial fertilizers offer him the only chance. Sometimes there is a great accumulation of potash and phosphoric acid in the soil of old gardens, and all that is needed to make it productive is an application of two or three pounds of nitrate of soda to the square rod.

M. CRAWFORD,
Cuyahoga Falls, Ohio.

AFTERNOON SESSION.

The meeting was called to order early in order to hear from both Prof. Bailey and Prof. Cook before their train left for Lansing.

Prof. L. H. Bailey, of the State Agricultural College, addressed the society upon

CITY AND VILLAGE HORTICULTURE.

[ABSTRACT.]

The speaker first spoke of city horticultural societies. It should be the aim of such organizations to control the ornamentation of cities. They should make their influence felt so thoroughly that they shall be consulted in the planning for parks and for street adornment. Through a quieter, though, perhaps, stronger influence, they can largely control much of the planting done in private grounds. In short, the city horticultural society should be in a very important sense the guardian of all local ornamental gardening, and the center of good horticultural practice. This office it can perform without any official or officious announcement. Quiet, persevering, honest, intelligent work will soon gain the respect of the community.

Some hints were thrown out concerning city ornamentation. Landscape gardening, as ordinarily used, is a broad term, covering both a fine art and an industrial art. Every fine art must have an industrial or mechanical art

which materializes it. Thus architecture is supplemented by carpentry and other arts, music by the art or practice of rendering it, sculpture by the chisel and the marble. Landscape gardening, the fine art, deals with ideals of the mind. It sees the beauty in natural objects and landscapes as the painter sees it. To materialize these ideals, to make them a part of our homes, requires the spade and the hoe, the road maker and the tree planter. This mechanical part of ornamental gardening is a part of horticulture. Thus it happens that the professed treatises upon landscape gardening often fall into a mere treatment of horticulture. This branch of horticulture is a peculiar one, however, and deserves a particular designation. It may properly pass under the title of landscape horticulture.

The minor ornamentation of cities falls mostly to landscape horticulture which has borrowed rules, precepts, from landscape gardening. A few remarks concerning landscape horticulture for cities may stimulate thought. In ornamenting small grounds, three general features include most of the details: Surface, walks and drives, planting.

Surface.—Avoid a perfectly flat surface. A gentle slope in one direction or another, a slight hollow or a raised border at one side will relieve the monotony which would come invariably from a level surface. The slope or hollow may not be marked and yet produce a good effect. In fact, in small yards, slopes or other changes of surface direction which are very conspicuous usually detract from the beauty of the grounds. Some of the pleasantest surfaces are those whose grades are so slight that the casual observer does not notice them. If possible, the surface should slope away from the house. On the other hand, avoid little irregularities. Avoid mounds and piles of stones, and abrupt hollows. Such objects break the continuity of the place and distract the eye, calling attention to details rather than to the grounds as a whole. Raised borders, if used, should not be very bold and should be kept well towards the rear sides and well planted with flowers or shrubbery.

There are some cases in which the lay of the original surface is so peculiar or so rough that unusual methods must be employed to render the place attractive. Some of the most intractable instances are those where the residence is near the street and either much above it or much below it.

In general it is best to dispense with terraces, even though the slope be great. A steep yard may be graded to a gentle slope and the front, against the street, be held by a retaining wall. This wall should never be more than thirty inches high, however. If higher than this it becomes very offensive to passers by. If a fence or wall of this height will not correct the slope of the yard, it is better to dispense with it and make a sodded bank next the street. This bank should be as near the street as possible without appearing too abrupt, unless in the case of very deep lots, for by this position a long stretch of sward is left in front of the residence. We should plan for views from the house rather than from the street in such cases. This bank should now be planted with small and graceful shrubs in an irregular manner. The crest especially, and a small area back of it if the grounds are large enough to permit, should be planted to hide any appearance of an abrupt break in the surface from the direction of the residence. With judicious planting such banks lose much of their obtrusive character. Do not terrace the bank, nor make it very steep.

If the site is much lower than the highway greater difficulties are presented. In no case should the surface be graded continuously towards the residence.

Make an abrupt bank sloping downwards from the street, and plant it densely with luxuriant vegetation. Such planting will hide the boldness of the bank from the street, affording only attractive glimpses of the ornamentation below and beyond, while from the direction of the house it changes a bold, bare slope into a bank of trees and shrubs. The bank may be so effectually hidden as to appear like an ordinary shrubbery or shelter belt. High trees should be planted along the crest next the highway, and occasional openings should be left to afford glimpses of the street and views beyond. The surface immediately in front of the residence should present the character of ordinary good lawns.

Walks and Drives.—Walks and drives always disfigure lawns. They are a necessary evil. Hence it is important that they should be few in number, and should be so placed that, while convenient, they will obtrude upon the attention as little as possible. Drives should follow close upon the boundaries, so that the body of the lawn may not be broken. It is commonly necessary, however, that the walk should bisect the front grounds. In very small city yards the walk should be straight or nearly so. Except in rare cases a walk should not be at all curved if the residence is as near as thirty feet to the street. In all cases the curves of walks and drives should be simple and direct. Sudden turns or wriggles not only add inconvenience to the walk or drive, but detract from the beauty of the grounds by inviting attention to themselves. Avoid crooks of all sorts. Crooked walks and drives, piles of stones, rows of beer-bottles and shells about flower beds, marble figures, and curious rocks along the entrance all belong to the same class of ornamentation, or rather of dis-ornamentation. The borders of the walks should be low and regular, an inch being high enough in most cases.

The speaker exhibited charts of proper and improper walks and drives, drawn from actual examples. The most faulty example was a representation of the court-house grounds at Charlotte.

Planting.—Planting for city lots falls under two heads, flower planting and shrubbery planting. For any planting, the first rule to learn is to keep the front of the place open. Do not hide the house. Do not botch up the front yard with a medley of flowers, bushes and rustic seats. Designs of all sorts should be kept to one side. As a rule flower beds should be kept on the sides or borders. In deep grounds a few specimens of single shrubs or comely flowers may be introduced in front. Plant so as to hide the rear portion of the house, both from the street and from the residences of your neighbors. Hide the rear drive. In cities shrubs of medium height may be used for this purpose, and irregular flower borders may be planted in front of them.

Avoid planting very high-growing trees in small places, as maples and elms, unless they are set along the street. Even in that case exercise great care that the trees be not set too thick. Thick planting of large growing trees is a common and serious fault. If large trees exist in the yard, trim them very high. If you do not like the looks of the bare trunks, cover them with Virginia creeper. Never plant in city lots such large evergreens as Norway Spruce, the pines and the like. Use the smaller arbor-vitæ, the retinosporas, some of the junipers, etc. Use sparingly of evergreens of any sort. Be lavish with free-flowering, bright shrubs. Use honeysuckles, clematises, weigela, mock orange, spireas, roses, and the like.

L. B. Pierce said it might be a question whether we owed anything to

the public in the arrangement of lawns, but certainly a lawn on top and back of a retaining wall was about as unsatisfactory to the passers-by as anything could be. All that could be seen was the edges of the flower beds and the trunks of the trees. In yards where the street was not more than three feet below the house foundation, he would grade the whole yard to a level of the sidewalk excepting a narrow terrace in front of the house. The carriage drive could be brought to a level with the back yard and stable by a gradual rise at the side of the house. This would permit a carriage block or platform at a convenient point and add to the width of the front yard, as it would do away with one slope or both, if the neighboring yard was graded in the same way.

E. A. Long, of Buffalo, believed in retaining walls at the street where necessary, and also in gently curved walks. A curved walk, entering near one corner, was really more direct than one from the centre of the yard front to the front door.

AN HOUR WITH INJURIOUS INSECTS.

Prof. A. J. Cook, of the State Agricultural College, next addressed the convention in a very interesting way for an hour, illustrating his address with charts and apparatus for spraying trees. The following is a brief abstract:

The loss through the destruction of the codling moth, *Carpocapsa pomonella*—Linn., in each of the northern States every year aggregates many thousand dollars. It is no longer a theory but a fact that this loss may be easily and cheaply prevented. The old remedies of bands and of hogs in the orchards have proved inefficient. The new remedy, the arsenites, the speaker had now tried for several years. It was not only cheap and effective but practical. The cost of its application was not to exceed five cents per tree, and the time when the work should be done was at a season when it could and would be granted.

London purple is the best for this warfare. It is cheaper than Paris green, more miscible, and less likely to injure foliage. One pound to one hundred gallons of water is full strong enough. If any change is to be made it should be still weaker. Then the application may be so thorough that every apple will be reached and yet no foliage injured. Again, the application should be made early, very soon after the blossoms fall, by the time the apples are the size of small peas. If delayed longer many of the larvæ will have passed into the fruit and be out of harm's way. Too long delay or lack of thoroughness in making the application is why some who have tried this method have not succeeded to their entire satisfaction.

The poison should be mixed in water in a close tank or barrel and often thoroughly stirred. This is easily and quickly done by letting the hose from the force pump which throws the liquid extend for a moment each quarter or half hour into the barrel.

The Field force-pump, made by the Field Force Pump Co., Lockport, New York, and sold with gearing for \$30.00 is a most excellent pump, and should be owned by every large apple grower. Here the gearing attaches to the hind wheel of the wagon, so that the horses in drawing the wagon work the pump. A second hose passes into the barrel or tank and so keeps the poison constantly stirred. To use this I should select a still day, and pass on both sides of the trees, first going one way then the other. We thus make a very thorough application.

It should be borne in mind that in applying any liquid insecticide to insects we should not fail to dash it on with force. The effect of this is to make that thorough work which is absolutely necessary to success. This applies not only to London purple for codling moth and all foliage destroying insects where the use of this poison is safe, but also in using buhach or California pyrethrum—one tablespoonful to two gallons of water—to banish cabbage caterpillars, rose chafers, etc., white hellebore to destroy the currant slug, or the kerosene emulsion to exterminate plant and scale lice, etc.

The Nixon pump and spray nozzle, made by A. H. Nixon, Dayton, Ohio, was exhibited and praised by the speaker. The Nixon nozzle is even superior to the Cyclone nozzle for general purposes. The price of the nozzle is seventy-five cents.

In reply to inquiries Prof. Cook stated that he had not succeeded in preventing the ravages of the plum curculio by use of the arsenites. From his experiments he had no hope in this remedy for the curculio. The white hellebore was used same as buhach. Both would answer as well if dusted on as a powder, providing the application was as thorough. Such thoroughness, however, was well nigh impossible. The kerosene emulsion was made by using two ounces of whale oil soap or one quart of soft soap, one pint of kerosene oil and two gallons of water, all thoroughly stirred till a permanent mixture was obtained. This was easily accomplished by use of a force pump pumping back into the liquid.

Mr. R. J. Coryell followed and explained very clearly the life history of a number of our worst insect enemies and answering a good many questions in economic entomology.

Following the insect discussion half an hour was given the Hillsdale County Horticultural Society in which to transact business, elect officers and make announcements, after which the convention resumed its work and a paper was read upon

VARIETIES OF APPLES FOR SOUTHERN MICHIGAN.

BY J. F. FITZSIMMONS, OF HILLSDALE.

When I received notice that I had been assigned to open this topic I felt that were I otherwise qualified, under the then existing circumstances, it would be impossible for me to do so, and after replying promptly to that effect the subject was dismissed from my mind entirely. A little later I was requested to meet with two or three gentlemen on Saturday last to complete some arrangements for this meeting and then to my surprise no one had been assigned to this duty. A gentleman who ought surely to have opened this topic himself, he being well fitted to do so, argued that inasmuch as not much was expected of the one who opened this topic more than to provoke discussion, I could do it, and, somehow, without hardly being aware of it, I consented to try to say something that would call out some information from those much better qualified than myself to talk of "the best varieties of apples for southern Michigan."

At the outset let me narrow this subject down to something like this, "Varieties of apples which I should plant were I to put out an orchard in this locality."

I will omit entirely the question of whether we should plant root grafted trees or top graft them and will confine myself to varieties.

I do not believe that any variety of apples should be cultivated simply because it will sell well, nor simply because it is a good bearer. If we have a variety of excellent quality—I say *excellent*, not merely *good*, and I wish to emphasize that—if we have a variety of excellent quality and at the same time it is a good bearer, so much the better. But if we can have only one let us have quality, not quantity.

In regard to the selling properties of an apple, that should not be considered in the least. For if “it sells well” is the only recommend an apple has be sure the one who buys it and takes it home will find it out, and you may be sure, too, that next time he either will not buy at all or else will take another kind, and if for a few successive times he gets one of the “it sells well” kind he will make up his mind that he does not like apples anyway and will cease to buy apples at all.

I would not for a moment consider such apples as the Ben Davis, the White Pippin or Willow Twig. Possibly you may find a market for this class of apples for a few years, but if you do your conscience will surely accuse you for swindling the poor fellows whom you expect will eat them. And again, in planting an apple orchard we should remember that we are planting not for the market of to-day but for what the market will be ten, twenty, thirty, forty and fifty years hence. Do not for a moment let yourself suppose that such sorts of apples as I have just mentioned will be even tolerated in market in just a little while. Why, your swine will hardly eat them now! How long then will human beings tolerate them, and buy them at that? Surely not long. This is also true of evaporated fruit. The sooner the evaporators seek to build up a reputation of putting up and selling under their true names choice varieties, the sooner they will be established on correct principles.

There is only one distinction which I should make between an apple for home use and a market apple, viz.: the market apple should handle well. I am speaking now, remember, of the apple to be grown in this section, and no apple will sell to any extent in this section that will not bear transporting long distances. And inasmuch as we ought to raise both for market and for family use, we should plant very sparingly of those that are not good shippers. It will do to put in a few of the perishable sorts, but we should be careful about getting more than we can consume at home.

The matter of soil, too, should be taken into consideration in the planting of an orchard. The varieties which will thrive well in one field may not be just the thing for the adjoining one, so sudden and so great is the change in soil. I will not now undertake to make the distinction that should be made in the selection of varieties for the different soils, but will treat the varieties as if each were to have the soil best suited to itself. I trust, too, that none will question me too closely in regard to this branch of the subject, for I freely admit that I have not given the matter sufficient study to be qualified to answer.

I will in conclusion give a hastily prepared list which I think would be a fair selection for an orchard. Perhaps the per cent of each kind might be varied slightly to suit the taste of the planter without materially affecting the quality of the orchard. The following list gives the percentage:

Northern Spy, 20; Red Canada, 15; Golden Russet, 15; Baldwin, 15; Esopus Spitzenburgh, 10; Rhode Island Greening, 5; Peck's Pleasant, 5; Talman Sweet, 5; Red Astrachan, 2; Early Harvest, 1; Hawley, 1; St. Lawrence, 1; Golden Sweet, 1; Shiawassee Beauty, 3; Garden Royal, 1.

If I had not succeeded in provoking a discussion before I came to this list, I trust I have done so now.

A. J. Baker—I would make a list about as follows: Summer Queen, Short Stem Bough, Greasy Pippin, Northern Spy, Rhode Island Greening and Baldwin.

Mr. Holloway—I would make a large per cent Baldwins. Red Canada must be top grafted. Ben Davis will do very well for a wind-break.

Mr. Tuttle spoke a good word for the Yellow Bellflower.

On motion of Mr. Coryell a vote was taken upon the varieties for planting in Hillsdale county, which resulted as follows:

Baldwin, 17; Northern Spy, 16; Rhode Island Greening, 13; Golden Russet, 12; Red Canada, 8; Talman Sweet, 6; Spitzenburg, 2; Limber Twig, 1; Grimes' Golden, 1; Fallawater, 1; Wagener, 1; Peck's Pleasant, 1; Ben Davis, 1; Jonathan, 1; Bellflower, 1; Golden Pippin, 1.

ECONOMIC POTATO CULTURE

was briefly discussed by C. A. Sessions, F. M. Holloway and others. A great deal of complaint was made concerning the ravages of the scab, for which no one had a sovereign remedy.

EVENING SESSION.

Prof. W. A. Drake opened the evening session addressing the convention upon the topic,

WHAT CAN OUR SCHOOLS DO FOR HORTICULTURE AND VICE VERSA.

[The address was interesting and instructive and I regret that it was impossible to secure it for publication.—SEC'Y.]

Following Prof. Drake, several gentlemen spoke earnestly of the importance of interesting children in growing things, and urged that some system of instruction be instituted by means of which our primary teachers would be enabled to employ the simpler facts in horticulture in common school instruction, thus engendering an interest in the children in things close about them and stimulating inquiry in the direction of the science and art of plant growth.

Prof. Drake offered the following resolution, which was unanimously adopted:

Resolved, That the State Board of Education be requested to prepare or cause to be prepared, upon the subject of horticulture, a syllabus for a series of lectures before the teachers of this State at the several State institutes held by and under the direction of said State superintendent, and that he instruct such institute conductors and instructors as he may appoint to participate in the forthcoming series of 1887, and thereafter to present before the teachers attendant upon such institutes at least one exercise or lecture whose aim shall be to indicate to teachers how they may with most interest teach the simpler elements and rudiments of horticulture in the public schools of this State.

Prof. Haynes said: I shall not await any instructions or suggestions from the State Board of Education, but at the coming State institutes that I am to conduct I shall take the liberty to call the attention of teachers to this important subject and awaken an interest in it. I can see so many ways in which horticultural accompaniments may be made useful in the school room. Flowers and the parts of flowers can be employed in teaching children to count, and while learning numbers the little ones are absorbing interesting facts in botany and floriculture.

Dr. Bion Wheelan suggested that while making a syllabus for teachers' institutes upon horticulture for the schools the fact be not lost sight of that ripe fruits are the most proper diet for students and that flowers are employed as a relief in diseases of the mind. They are restful, quieting, and ought to be a continuous accompaniment of every school room. With the bad air and barren surroundings the little people who attend the average district school have a tough time of it, and if we can induce teachers to educate parents and children to a lively appreciation of the delightful influence of the accompaniments of school premises which horticulture can bring the work will be a grand one.

Prof. Haynes suggested that an exercise at the State teachers' association upon this subject would carry a good influence with it, and a resolution was adopted instructing the secretary to communicate with the president of the association and urge that the programme for next session contain a topic which will bring out a discussion upon this important matter. Secretary Garfield said that the balance of the evening would be given to a discussion of questions pertaining to forestry. The general subject would be opened by Col. F. M. Holloway, of Hillsdale.

THE FORESTRY PROBLEM.

MR. PRESIDENT:—It is with diffidence that I attempt to express myself on the forestry problem in the presence of so many scientific minds as are before me to-night. Minds who have made it their study since boyhood to trace problems from cause to effect, and in so tracing to arrive at truths and conclusions in harmony with the great laws of nature, which cannot be violated with impunity or set aside with indifference.

The ideas I shall advance on this subject will be drawn from observation and experience for a period of fifty-four years' residence in our beautiful State of Michigan. A period antedating the birth of many before me to-night, ante-dating our statehood and co-extensive with the very first settlements made in the then territory "save on our eastern borders." While I have put upon record my views for the last twenty-five years on many of the agricultural, horticultural and miscellaneous questions of the day that concern us as an advancing people, I have never broached the subject of forestry or its relation to successful and profitable farming or its influence as a conservator of health or the invigorating effects on the human system as it measures and sets its mile-stones on the great thoroughfare of life's journey. Nor would I now but from the fact that it may be the last opportunity I shall have in contributing my mite to restoring to our country a substitute for the ruthless destruction of our forests, which covered our landscape with sublime beauty on almost every section of land in our State.

It is a fact that cannot be gainsaid, that great mistakes were made by our

earliest settlers in an indiscriminate slaughter and destruction of their timber. Any way to get rid of it was their motto. The theory of a wind-break was not in their cyclopedia of knowledge.

The scientific truth that the forests were the great equalizers of heat and cold, of rain and sunshine, of storms and tempests, or as absorbents of the deadly gases constantly exuding from decaying matter, spread broadcast by the woodman's ax, had but light impression upon them. Neither did they take the afterthought that as sure as effect follows cause, so sure would follow the whole insect world to commence their ruinous depredations on the fruits of the field and garden as soon as warmed into life by the penetrating rays of the summer sun.

Our observations from 1833 to 1843—just one decade—were years of plenty and fruitful in the full sense of the term. No extreme storms, heat or cold intervened to disturb the equilibrium of the seasons. No insect pest made its appearance to depredate upon our grains or fruit. Plums, cherries, peaches and apples were reasonably abundant and as fair as Pomona herself. To this date the woodman's ax had not made such serious inroads as to take more than a third of our forests, the equilibrium of the seasons had been fairly preserved, our yields of grain to the acre were abundant and satisfactory to the husbandman.

From 1843 to 1853, our second decade, southern Michigan settled up very fast, nearly every section of land had its quota of families on it; the work of removing the forests went forward with great energy, showing at the closing of the decade that at least five-eighths of the timber originally standing between Lakes Erie and Michigan, as far north as the third tier of counties, had gone by the consuming fire or passed through the saw-mill, manufactured into lumber which sold for from six to ten dollars per thousand, which now sells in the market for from \$70 to \$80 per thousand.

In this decade we had our first experience with the Dakota blizzards. We had opened a highway for them to travel in, and they were not slow in accepting the invitation, gathering in their course as they left the Rocky mountains, sweeping over the savannas of Dakota, Iowa, Wisconsin, Minnesota and Lake Michigan, striking our denuded territory with the fury of unchained lightning, it set our people to reflecting on their mistakes, especially when these were enforced by extremes of heat and cold never before experienced here. Nor was this all—our grain crops were twice cut off in these ten years by drought and insect pests; our fruits experienced their first set-back by excessive freezing followed by burning suns, which had warmed into life the myriads of fruit pests which lay waste and destruction in their wake and which so far have stuck to us closer than a brother.

From 1853 to the present time the same causes have prevailed, only in a larger degree and more intense in their effect. Some of our cultivators have overcome these causes in a measure by extra expense and labor in cultivation, yet this practice is not general, but probably growing.

From a careful analysis of the whole question it would seem to us that the mistake so early made and so far-reaching in their consequences will be one of the most difficult to correct. And yet we are not without hope. No great errors will be likely to remain with our American farmers when they once see them, without an effort to correct them. It will take agitation, line upon line, precept upon precept, here a little by way of experiment and there much to determine the kinds of forestry to cultivate and set in the limited space the

average farmer will devote to wind-breaks, which will be equal to one-third of our natural forests before they were removed.

The money value of this problem has hardly been taken into account by our people. With the facilities of railroads and navigation our wants are yet largely supplied from other localities at largely increased cost. But what of the supply in a few years more. Who has the prescience to compute the value of a thousand feet of common lumber a third of a century hence, when it is conceded by our best statisticians, our lumbermen and all interested in the products of the forests that in twenty-five years more the entire visible supply to the north of us will be exhausted.

When we take into the account our fast increasing population and the necessity for houses to shelter them and barns to protect their stock and products, we may well wonder where it will come from, what it will cost, and the question may and will be often propounded by those coming after us: "Why was it the pioneers of our land so indiscriminately slaughtered their forests, depriving future generations of untold blessings, and bringing upon them by so doing the scourge in nature that follows in the wake of inharmonious adjustment of the forces that make the highway of life's journey inviting to the senses, and the fields of the husbandman to yield of the fruits thereof an hundredfold?" If the mistakes and errors that we have enumerated are based on fact, sustained by scientific conclusions, it is pertinent to inquire if there is a remedy, and if so how shall it be applied. I think you will all agree with me that a perfect remedy is out of the question. While we may, in a measure, restore our small timber for uses on the farm and for wind-breaks, our work in this direction will contribute to an equalization of the temperature of the seasons, if on a scale covering a third of the the surface, or nearly that. But we can never restore those magnificent, heaven-towering deciduous trees of which the oak, the elm, the linden and magnolia are conspicuous examples, nor can we return to their native habitat the beautiful conifers, whose heads pierced the clouds and through their branches made soothing lullabys of the Dakota winds on their journey to the sea. We can imitate them all, but they are only wind-breaks at their best. A pertinent inquiry presents itself in conclusion: Can the farmers of our beautiful State be made to see that it is for their interest to set aside a portion of their acres, say a fourth, and cultivate it with our quickest growing trees native to the soil and climate?

In the solution of this inquiry lies the whole secret of success; if answered in the affirmative the work of restoration is properly begun; if not, further agitation becomes necessary. Agitation, did I say? Yes, this has been and is now the great Archimedian lever which changes nations, communities and peoples; and who better prepared to direct this force than the State Horticultural Society. Success, gentlemen, to your noble undertaking in restoring our country to its native beauty and fertility.

In continuance of the discussion the secretary read the following interesting letter giving

HISTORICAL AND SUGGESTIVE FORESTRY NOTES.

FROM E. W. BARBER, OF JACKSON.

*Jackson, Mich., Feb. 15, 1887.*HON. C. W. GARFIELD, *Secretary Michigan Horticultural Society:*

MY DEAR SIR:—No doubt you had in mind my enforced idleness when you invited me to prepare an address on the forestry question, and deliver it at the coming meeting of your society at Hillsdale. I informed you that I am not in the missionary business, as I have learned that it is a tremendous task to convert men and save them from themselves, but your request has become a purpose on my part to write something of a general nature on the subject, which you may use or not as you think best.

It is not the expenditure of millions of dollars for coast defenses, ships of war, torpedoes and cannon that this country needs for its welfare half so much as it requires forest protection. The floods of the present month emphasize this fact with destructive energy.

Too long has man been the enemy of nature. For centuries it has been the fashion to place the world, the flesh and the devil in the same bad category. Out of this grew the shameful practice of maltreating their bodies, hating the world in which we live, and turning both over to the devil. Nature-hating became a part of religious teaching and duty. In many instances, where men have been the most religious, nature has been blighted and desolated the most by them. Palestine, Persia, Asia Minor, portions of Spain and Italy, Ceylon and Cyprus, the north of Africa—regions once celebrated for agriculture, commerce and sylvan attractions—are now classed among the most barren portions of the globe.

The relation between the wooded areas of a country and its welfare are too close and important to be overlooked. To destroy the forests is to invite permanent disaster. In the interior of every continent at least one-third of the area should be woodland. The mountains should never be denuded. Humboldt, the great student and lover of nature, said: "In felling trees growing on the sides and summits of mountains, men under all climes prepare for subsequent generations two calamities at once—a lack of fuel and a lack of water." He might have added that such action causes more destructive floods in the fertile valleys during the seasons of melting snows and falling rains. The water that falls on the barren mountain sides rushes rapidly down the gullies into the rivers, causing fearful floods and great destruction of property. If, on the other hand, the mountains were covered with forests, the falling rain and melting snow do not form such torrents, for much of the water is caught and held by the mosses, the roots, the leaves, the fallen logs and brush, and trickles away gradually to the valleys beneath, mitigating alike the severity of spring floods and of summer drouths.

It is a pity, so far as the welfare of future millions is concerned, that an acre of mountain land, from the Adirondacks on the north, to the piny woods of Alabama on the south, has ever been sold to the forest-destroying speculator, and that the whole area had not been long ago placed under charge of an intelligent forestry department of the government, and the timber cut only to save it and not to destroy it. By such means, and such only, could the val-

leys of the Atlantic Slope, and the greater valleys of the Ohio, the Cumberland, the Tennessee, and finally of the Mississippi, have been saved as the garden land of the United States.

The Servians have a proverb worth repeating: "Whoever kills a tree kills a Servian." The sandy isles of the West Indies, the once populous regions of Asia and Africa, which are now deserts; the barren wastes of Spain, which were once gloriously prolific; and that historic land formerly "flowing with milk and honey," but now the "abomination of desolation," prove the truth of the proverb as to other people than the Servians. In the destruction of the forests man has been the enemy of nature, and nature has retaliated by ceasing to minister to human needs.

These are the teachings of science and of history, and we are going substantially the same way in this country. The frequent overflow of the Mississippi, the Ohio, the Susquehanna, and other water-courses, large and small, with the resultant loss of life, destruction of property, and arrest of business, may be largely traced to the extirpation of the woods along the Appalachian mountains. Like results, too, are being realized from stripping the water-sheds of New England. Brooks in which I fished in my boyhood, during the summer months do not now carry a drop of water from the hills to the river and lake, and thence on to the ocean, except during the spring freshets, and then they bear away much of the best soil. Their sources have been ruined, the springs that fed them have dried up, and no longer do they furnish drink for the pastures or meander through the meadows.

What has taken place in other lands must also come to pass here unless we save our forests. Cause and effect are the same the wide world over. Making due allowance for the waste, destruction and depopulation of countries by war and its crushing burdens of taxation, it is now generally recognized that the dispeopling of portions of the old world, the decline in political and commercial influence of once powerful and progressive nations, the decadence of prosperous communities into squalid and degraded hamlets, because nature yields insufficient to sustain anything better—fruitful fields having been changed into fruitless solitudes—have had the extermination of their forests as one of the most efficient causes and potent agencies for such results.

The evils of deforestation have been many times rehearsed, but they need repetition. They are events in the world's history, and men are educated by events rather than by arguments. The politician will do nothing to save a land from destruction unless driven thereto by the people. But it is not my purpose to suggest a remedy. Public sentiment must first be aroused to the fact that nothing is more certain than that trees are necessary on the hills and mountains to perfect and preserve the springs and insure a steady supply of water to the valleys throughout the year. If the woods about the sources of the streams are cut away the springs will flow but a short time after the winter snows have disappeared and the spring rains ceased. In early summer they disappear entirely and with them the small brooks they have fed, and the creeks and rivers are greatly reduced in volume or they vanish entirely. Drouth, poverty, suffering ensue, and fine agricultural possibilities are ruined, because the soil is deprived of its needed moisture.

The other evil, already alluded to, is scarcely less serious. This comes from the inundations that devastate the valleys where the mountains have been denuded of their forests. Spain, it is said, has been the worst sufferer.

Except in a few localities, principally along the southern base of the Pyrenees, or bordering the blue Mediterranean, it is described as a treeless country, its olive orchards affording here and there a partial exception. A tourist says one may travel by train for days here and there over the great central plateau, which constitutes the greater part of the peninsula, and scarcely see a tree, not even an olive on the plain, and not a grove on a hill or mountain side. The desolation seems appalling. As a natural consequence the rains that fall, not being detained by groups or forests of trees, run off at once into the valleys, where they swell the streams to enormous volume and cause frightful inundations two or three times a year. Where the hillsides are covered with vines, as in France, and with olives, as in Italy, some protection is afforded, and then there are laws in both these countries to protect the beneficent forests.

But what have we done in this country? Nothing for the protection, but everything for the destruction of our forests—giving an indirect bounty of two dollars a thousand feet on all the lumber in them, under the mistaken notion that by so doing we were protecting them and promoting the general welfare. Why, such a policy is like paying a bounty to encourage the eating up of seed corn—contributing a bonus to hasten the destruction of what ought to be preserved. In many instances the destroyed forests are not renewed. The land becomes a waste, or covered with a few poor scrubs that are a perpetual protest against the destruction that has been stimulated by the payment of bounties—if not for that purpose, certainly with that result. We might at least stop encouraging their extermination.

President Arthur, in one of his messages to Congress, referred to the rapid disappearance of the forests throughout the country, and stated an obvious truth when he said that “their total extinction cannot long be delayed unless better methods shall be adopted for their protection and cultivation.” This is a mere hint at their value, but not at the fatal consequences of their extirpation. It suggests the old story as old as civilization itself. The loss of the timber is but a small matter in comparison with the greater evil of rendering fertile and populous valleys sterile and tenantless. Professor Geikie says: “It must be owned that man, in most of his struggles with the world around him, has fought blindly against his own ultimate interests. This contest, successful for the moment, has too often led to sure and sad disaster. Stripping forests from hill and mountain he has gained his immediate object in the possession of their abundant stores of timber, but he has laid open the slopes to be burned by drouth, or to be swept bare by rain. Countries once rich in beauty, plenteous in all that was needful for support, are now burned or barren, or almost denuded of their soil.” And this is the result to which we are rushing, with all the haste begotten of avarice, in portions of the United States.

So fatal has been the consequence of deforestation in other lands that Hon. George P. Marsh tells us, in his work on “Man and Nature,” that if the countries which men have ruined could be restored, “the thronging millions of Europe might still find room on the Eastern Continent, and the main current of emigration be turned towards the rising instead of the setting sun.” For, he adds, “there are parts of Asia Minor, of Northern Africa, of Greece, and even of Alpine Europe where the operation of causes set in action by man has brought the face of the earth to a desolation almost as complete as that of the moon; and though within that brief space of time which we call the

historical period, they are known to have been covered with luxuriant woods, verdant pastures, and fertile meadows, they are now too far deteriorated to be reclaimable by man, nor can they become again fit for human use."

And that best of all American observers and writers, Dr. Felix L. Oswald, states that "since the beginning of the sixteenth century the population of the four Mediterranean peninsulas has decreased more than fifty-five millions, and the value of their agricultural products by at least sixty per cent." And of the regions once the seat of empires he says: "Afghanistan, Persia, Mesopotamia, Syria, Asia Minor, Greece, Macedonia, the southern islands of the Mediterranean, and the whole of northern Africa from Cairo to the western extremity of Morocco—countries which were once blessed with abundance and a glorious climate—are now either absolute sand wastes or abodes of perennial drouths, hunger, and wretchedness; and wherever statistical records have been preserved, it is proved beyond the possibility of a doubt, that their misfortune commenced with the disappearance of their arboreal vegetation."

Do we flatter ourselves that from like causes we can escape like results? It is not safe to trust in Providence unless we act in harmony with the laws of nature. Providence never shields men from the consequences of their own conduct. As it has been in France in recent years so will it be here. In ten years, from 1842 to 1852, the department of the Lower Alps alone lost sixty-one thousand acres of arable land, which had been washed away and rendered worthless for cultivation by torrents caused by cutting off the forests, and in the five years, from 1851 to 1856, the departments of the French Alps lost from the same cause 103,000 inhabitants. Since then the government of France, by re-wooding the land formerly in forests at the sources and along the banks of the streams, and other improvements such as only a paternal government can direct, has restored the valleys to much of their original fertility. But in a climate like ours the evil of denudation is not the only one attendant on clearing up the woodlands. An anonymous author says: "Forests obstruct the winds and protect man, animal and plant. They prevent evaporation, absorb the rains, and thus feed perennial springs and maintain the constancy of the streams below. The forests gone, the floods which follow damage the labors of man, and the dearth which follows is often with difficulty made adequate to the supply of civilized needs. Driving winds, now unobstructed, blast the winter vegetation, while frosts strike with more force, and it becomes more difficult to grow the fruits and grains as the country becomes more cleared."

In Michigan the forest area, according to the latest official reports, is 38 per cent of the total acreage. Out of 36,755,000 acres all told but 14,000,000 are covered with forests, about 7,500,000 acres are included in improved farms, and over 16,000,000 acres are designated as waste and unimproved lands. In many of the southern counties there are not half woods enough, even if properly distributed, to afford adequate protection, the area varying from 14 to 20 per cent. Even the prairie State of Minnesota has a larger percentage of forests than Michigan—nearly six-tenths, or over 59 per cent being covered with timber. We, in southern Michigan, have gone far beyond the safety line in the matter of tree destruction, and still the vandal work goes on. We are treasuring up wrath—the wrath of the elements—against ourselves. It is hardly worth while to have posterity for a country thus injured. If there was twice the forest area there is now in our portion of the State and the improved land was better fertilized and watered and tilled its aggregate pro-

ducts would be increased. Really the protection our people need is protection against themselves. No land owner should depend upon his neighbor for woods to shelter his own wheat fields. For every tree felled four should be planted. While we may not owe anything to posterity we have no moral right to make the land, which we did not create, and which is the gift of God to man, uninhabitable, or even partially so, because we can pocket a few dollars by the destruction of the forests.

Perhaps, under our dual system of government, with no sovereignty anywhere, and with the recognized right of each person to do as he pleases with his land, there is no adequate remedy—no way to prevent sylvan suicide—and that whatever is done must be the result of individual, or, as in the case of Arbor Day, of holiday action. If there is no remedy, then there is ruin for the fairest portions of our land staring us in the face. Destroy the forests and the capabilities of the soil to support a large population will be seriously impaired.

In Canada the parliament has passed an act which provides for reservations on the slopes and crests of the Rocky mountains for the express purpose of preserving an even water supply. Something like this might yet be done by the United States, and thus prevent the drying up of the sources of the streams that irrigate the vineyards and orange groves of California. In Michigan the government owns nothing that is worth saving. What the farmer does not rightly own has been turned over to the jobber and speculator for denudation and destruction. After the forest areas pass to private and corporate ownership there is no saving remedy. We recognize the right of the individual to do whatsoever he will with his own, even to the extent of rendering uninhabitable, so far as in him lies, the land he did not create.

The surface of the earth is a determinate quantity. Man cannot add to it. Already he has rendered some of the fairest portions of it uninhabitable. The best he can now do is to protect this western hemisphere from like destruction. The lessons of experience and of history are valuable. He must spare the forests. As stated, this is largely an individual matter under our institutions, for, while the right to destroy the country with swords is denied, the right to do so with axes is regarded as inalienable. Nevertheless the government ought to spend more for foresters and less for soldiers—more for preservation and less for destruction.

The theme is a fruitful one. It touches the welfare of our people in the future more than any have yet conceived. But, with these few and general suggestions, the chief object of which is to call attention to its importance, I take leave of the subject for the present.

Very truly yours,

E. W. BARBER.

Interesting illustrations from our own State of the immediate influence of forest removal as affecting climate and productions were given by President Lyon and Secretary Garfield. Several gentlemen gave it as their opinion that narrow belts of timber, even such as were left as hedge rows along the highway, had a beneficial effect upon crops, and especially orcharding.

L. B. Pierce said it was the fashion to blame the pioneers for their thorough clearing, and speak of their work much as we would that of the Goths and vandals of old, and forget that the civilization of to-day was an outgrowth of their labors, and would be impossible if the country were covered to any ex-

tent with forests. Doubtless it was time to begin to retrace our steps and commence planting; but we should remember that the conditions of forest existence are so changed that it is useless to lament the clearing away of mature trees. In the original forests still standing it is difficult to find perfectly sound and healthy trees, and we must cut them or lose them. We should also remember that large numbers of trees are growing in prairie States that had no trees a third of a century ago. This, of course, would not help southern Michigan, but it showed us how rapidly the country could be reclothed with forests, and helped to mitigate our regret at the necessary destruction of the original forests.

There seemed to be a prevailing opinion among those present that although we were in no imminent danger from the destruction of our timber, still we did not have the healthy feeling that we ought concerning the importance of preserving and planting timber areas.

Thursday Morning Session.

The first work of the morning was the receiving of reports from the delegates sent to the meetings of sister societies. The first report was from the

ONTARIO FRUIT GROWERS' ASSOCIATION.

BY PRESIDENT T. T. LYON.

The undersigned, delegate to the meeting of the Ontario Fruit Growers' Association, at Chatham, Ontario, on Wednesday and Thursday, February 9th and 10th, 1887, would respectfully report as follows:

We reached Chatham on the morning of the 9th, in time for the opening session, at 10 o'clock A. M.

The forenoon was partially devoted to the placing of the fruits; the amount not being large, although of fine size and general appearance, except that many specimens were destitute of stems, and a few had been occupied by the larvæ of the codling moth. In these respects they were hardly up to our Michigan practice. The specimens were arranged upon tables, but without plates, and few, if any of them, were named, although they were, in most cases, of varieties generally known, so that labeling was hardly needful.

We observed the difficulty so common with our own society—that, with a fair attendance of members from other places, the local attendance was light.

The discussions were generally opened with a short paper, followed by extemporaneous remarks, although we observed that it seemed to be customary for the president to direct, and in some degree control the consideration of the subjects, by calling out such persons as he deemed proper, rather than by leaving room for volunteer remarks; while the discussion of a subject was peremptorily closed, by the chair, at the hour fixed for the consideration of the next topic, and the same occurred on the arrival of the hour for adjournment.

The city authorities provided a banquet at the Garner house on the evening of Wednesday, and the association held but a short evening session in consequence. A large company were seated at the tables about eight or nine o'clock P. M., and after the discussion of edibles, the first toast—The Queen—was drank, standing, in pure cold water, and the entire company responded by singing the National hymn. The President of the United States came next in order, and as there seemed to be but a single representative of Yankeeedom present, your delegate was called on for a response. Had his vote been fortunate enough to have elected "the other man" he might perchance have been able to respond more heartily, but as it was, he did the best he could. Those in authority generally were remembered in the successive sentiments offered, and in responding to that of The Colonial Exhibit at London the past season, the president of the association, and also P. C. Dempsey, who were commissioners on that occasion, gave a full account of their observations and experiences while in attendance. The "pure and sparkling liquid" employed on the occasion served to keep the spirits of the audience at fever heat till after one o'clock A. M., when the exercises closed.

The usual forenoon and afternoon sessions were had on Thursday. During the afternoon an hour was devoted to eulogies upon Marshall P. Wilder, late President of the American Pomological Society. Mr. William Saunders, a former president of the association, was called on and spoke very feelingly of him, and of a recent visit with him at his late residence at Dorchester.

Your delegate was also called on and spoke of the great work he had accomplished through the the American Pomological Society, as well as by his labors aside from those of the society.

The question box was drawn upon from time to time and the discussions covered a good deal of ground, but space will not suffice for its analysis.

A committee on exhibits had been appointed, which proceeded to make examinations and awards.

From the phraseology of their report we are led to infer that premiums had been offered upon exhibits, but, if so, such fact was not definitely stated.

The financial aid received from the Dominion government enables the association to so conduct its operations as to maintain a large membership, and recently an experimental farm has been established at Ottawa, with branches located at other points, the purpose being to meet the requirements in this respect of the inhabited portions of British America. The establishment has been placed in charge of Mr. Wm. Saunders as director general.

All of which is respectfully submitted.

T. T. LYON.

The next report was from

INDIANA HORTICULTURAL SOCIETY.

BY CHAS. S. CRANDALL.

The Indiana State Horticultural Society met at Columbus on Tuesday, December 7th. At the first session held in the afternoon the president delivered his annual address, and reports of officers were presented. I reached Columbus too late to attend this first session.

In the evening Hon. B. G. Northrup, of Clinton, Conn., addressed a good audience on "Village Improvement." He made a forcible plea for the form-

ing of improvement societies, described what had been accomplished in several New York and New England villages by such societies and by individual effort, and held these places up as worthy examples.

The address was very interesting and seemed to be appreciated.

Following Mr. Northrup, Mr. Kingsbury, of the Indiana Farmer, read a pleasing paper upon the "Ethics of Horticulture."

The Wednesday morning session was opened by a paper by A. G. Chandlee, entitled "The Old Grape-vine on the Wall." Mr. Chandlee spoke of the beautifying effect, and of the utility of using house or barn walls as a trellis for the vine. In speaking of vineyard management he said that he did not plow or cultivate, pruned very little and never pinched back during summer, but allowed the vines to run as far as they pleased. He also said that he was never troubled with rot or mildew, while his neighbors lost largely from these two diseases. These remarks called forth an animated discussion, largely in opposition to the methods recommended by Mr. Chandlee. The experiences as given by the different speakers were nearly all in favor of thorough cultivation and of confining the vines within their allotted spaces, varying according to the distance between plants, which was variously given at from eight to twelve feet. Two or three speakers who had practiced Mr. Chandlee's method of culture and pruning confessed to great loss from rot and mildew. Although many questions were asked a clear and satisfactory answer as to the direct cause of the absence of the diseases from Mr. Chandlee's vineyard was not brought out. Several cases were mentioned showing quite clearly that when vines were trained against buildings and protected in a measure from moisture by overhanging eaves, they escaped both rot and mildew, while vines of the same varieties on trellises near by were more or less affected.

At the afternoon session Mr. J. C. Ratliff, one of the trustees of Purdue University, read a report on that institution, dwelling upon the finances, the management and future prospects. Professor Troop then made a report upon the experiment stations, telling what had been done at the eleven sub-stations located in different parts of the State and supplied and directed from the central station at Purdue. This method of carrying on experimental work through local stations is a new departure, not yet thoroughly organized and not old enough to furnish results of value. They have met with difficulties from lack of funds, but the professor has great hopes of the future usefulness of the system.

Following Prof. Troop a very interesting off-hand talk was given by Dr. A. Furnas upon "Grafting, Budding and the Preparation of Cuttings." The doctor was supplied with all the necessary tools and plenty of material for illustrating each point as he proceeded. Many questions were asked and the object lessons were appreciated and enjoyed by all.

Wednesday evening the election of officers was held. Sylvester Johnson was elected president and C. M. Hobbs secretary.

Mr. Yenowine then presented a paper on the effects of commercial fertilizers in Floyd county. The speaker's experience was very much in favor of a liberal use of superphosphates and other prepared fertilizers.

The English sparrow was taken up and discussed at some length. President Johnson and one other gentleman stood alone in its defense, all the rest speaking in strong terms against the sparrow, and in favor of a war of extermination. The damage to ripening fields of grain was dwelt upon and

shown to be very great. Mr. Warder spoke to the point on the food question. He had examined the stomachs of fifty birds, and only during the short period when the birds are feeding their young did he find insect remains, and these were largely those of harmless or beneficial species. He concludes that the sparrow is of no use as a destroyer of insect enemies.

The session closed with an address by Professor W. H. Ryan on "The Progress of Cold Waves." By means of charts he illustrated the progress of the cold wave of January, 1886. The lines of low temperature, as traced on the charts, curved well above our State, and the professor brought out very clearly the wonderful protecting influence of the great lakes upon the climate of Michigan.

So many were obliged to leave Wednesday evening that the Thursday morning session was attended by very few. The paper of the morning was by Professor F. M. Webster, of Purdue, on "Insects of the Year."

The secretary read a short paper, by E. Y. Teas, on "Small Fruits in Kent County, England."

The absence of Professor T. J. Barrill and several others who were upon the program was much regretted.

President N. Ohmer, of the Ohio Society, and Mr. J. Webster, of the Illinois Society, were present and took part in the discussions.

The attendance was generally good, and a commendable degree of interest in the papers and discussions was manifest.

Following this report Secretary Garfield gave the following brief account of the meeting of the

WISCONSIN HORTICULTURAL SOCIETY.

To the Michigan State Horticultural Society :

The Wisconsin Horticultural Society is made up of very bright men and women as they appeared to me. The president, J. M. Smith, who was re-elected with a cheer, is a venerable appearing gentleman, genial, open hearted and open handed, full of enthusiasm, and an admirable presiding officer. I have met a good many secretaries of similar societies, but have never become acquainted with one who comes so near my ideal as Mr. H. C. Adams, of the Wisconsin Society. He not only knows how to do the arduous work that is always heaped upon a secretary, but he is a good farmer and horticulturist with an experience of his own. Such a man knows what to elaborate and what to eliminate as he proceeds with the records of a convention. Mr. B. S. Hoxie, the corresponding secretary, strikes one as a substantial man who has opinions of his own that have been carefully crystallized. He expresses himself cautiously but firmly and to the point. J. S. Stickney, of Waunatosa, is full of good nature. There is nothing sour about him if he does manufacture pickles, and he is reckoned as a corner stone of the society. I met so many men that I have heard of and corresponded with that I cannot name them all. A. G. Tuttle, A. L. Hatch, J. C. Plumb, Geo. J. Kellogg, Pepper, and Phoenix were there; all of them men who have made a reputation as horticulturists. I would like to tell you just what I think of them all, but fear you will think they treated me too well for my own good if I do.

Their meetings have less formality than ours, and in one way especially I think this is commendable. A speaker expects to be interrupted and invited

to explain more fully his points as he goes along. This knocks out any attempt at oratory or embellished sentences, but leads one to fortify himself on every point.

A considerable time of the convention is taken up with questions concerning the hardness of varieties. In truth this is an all important subject with Wisconsin fruit growers. The ladies occupy a considerable portion of time in the meetings, and, from appearances, I judge it was no novelty with them.

The election of officers was a very short matter. There seemed to be no question on the part of anybody who should be selected. They had evidently found good men, and proposed to keep them where they would do the most good.

Like our own experience here in Hillsdale, the local attendance was not large, and the mistake was in having a hall sufficient to accommodate twenty times as many as were in attendance. The exhibit of fruit was a leading feature of the meeting. In this Mr. Pepper, of Pewaukee, takes the lead, and his knowledge of varieties grown in Wisconsin is quite wonderful.

I was made very much at home by these good people, and was treated after the first introduction as if I had always met with them; and because I came from Michigan did not prevent interruptions in my address, with requests to explain this or that point. The members are no respecters of persons in this matter, and if a man who goes there knows more than they do upon any question at the outset, he is made to disgorge fully before he leaves. They don't believe in having any secrets in horticulture. This feeling gives spirit to their discussions.

I observed among other things that the members had extraordinary memories, for several times in listening to statements they would interrupt the speaker and say "How is this? You said differently two years ago," or "That don't agree with what you told us last year." This observation led me to be more than usually cautious in my own statements, and I trust, under the inspiration of an attentive audience, I was not rash in expression.

A Wisconsin meeting is a good thing to attend, and I trust we will hereafter have an exchange of delegates with our sister society across the lake, and be encouraged to engraft upon our own methods some of the admirable characteristics of their meetings.

MARKETING APPLES

was given a little time, and Mr. Nathan Alvord, of Hillsdale, said that after all that had been preached about picking apples carefully, and packing them honestly, it was the exception to find a farmer who would put his apples into market in even half-way decent condition. Even if a man is determined to market every bit of his fruit it will pay him to put it in two or three grades rather than pack the whole crop "hit or miss." He especially deprecated the practice of placing inferior fruit in the middle of the package. He had found a looseness of morals in this direction greatly prevalent. Even a church deacon who would hold up his hands in horror at the thought of open lying and cheating would arrange to allow the small apples to drop into the middle of the barrel.

Mr. Hewitt said he could judge of the real value of a man's religion by the manner in which he packed apples. A man that would head up a lie in a barrel was a good ways from the kingdom of heaven.

Mr. Woodward suggested to the peach growers that a man could make money by putting the biggest specimens in the bottom of the basket, and the purchaser would be made happy at the same time. Put one big peach in the bottom of the basket and three large ones on top of it, and the basket is most full. For his part he was perfectly willing, as a grower, to pack peaches honestly, and put the "old whoppers" right in the bottom, where the little ones usually go.

Mr. Lyon believed in honest packages, and thought it not out of character to render the packages attractive by every legitimate method ; but he emphasized the importance of strict honesty in dealing.

Mr. Pearsall said in a long experience of marketing apples he was satisfied it paid to disappoint purchasers by giving them the best at the bottom of the package ; and still he appreciated the importance of giving a good impression as the package was first opened.

COMMITTEE REPORTS.

The committee on exhibits reported as follows :

There were on exhibit some fine specimens of apples by Mr. Alexander Hewitt, of Hillsdale, president of the local horticultural society, of the following varieties, Baldwin, Greening, Swaar, Golden Russet and Yellow Bel-flower. There were also on exhibit some specimens of canned peaches and pears by the same person.

Mr. H. K. Abbott, of Reading, exhibited a plate of Limber Twig apples.

There was a very fine display of potted plants, including both flowering and foliage plants, by Mr. W. Hughes, florist, of Hillsdale.

Mr. W. L. Snyder, of Detroit, made a display of a large number of fertilizers and fertilizing materials.

Some fine specimens of oranges from the agricultural department at Washington, were on exhibition of the varieties Bahia and Arcadia.

Also as a mechanical appliance, Wilson's trellis supporter, patented by J. B. Wilson, of Eaton Rapids, Mich.

The committee would recommend that special commendation be accorded Mr. Hewitt and Mr. Hughes for the fine display made by them at this time of year.

S. R. FULLER.

W. L. SNYDER.

E. H. REYNOLDS.

The committee on resolutions reported the following:—

Resolved, That we tender our thanks to the Hillsdale Agricultural and Horticultural Societies for their efforts to make this meeting a success and for many favors rendered. We also tender thanks to the proprietors of the Kiefer House for reduced rates, and to members of the press for kindly notices.

Further, Your committee would say in reference to the accompanying communication, which was referred to them, that we unanimously agree that it would be the height of unwisdom on the part of the Legislature to pass the proposed act restricting the free keeping of bees. In our opinion existing laws against trespassing and nuisances would give legal relief where bees become a serious means of injury to the neighbors of the keeper.

L. B. PIERCE.

H. W. DAVIS.

L. D. WATKINS.

The following is the communication referred to in the last resolution:

FAIRMOUNT, MICH., Feb. 21, 1887.

To the officers and members of the State Horticultural Society in convention assembled:

GREETING—Representative McCormick has introduced a bill in our State Legislature to prohibit the keeping of more than five colonies of bees within 25 rods of any public highway, or within 25 rods of any dwelling not the residence of the bee-keeper.

Should this bill become a law, and be enforced, it means the extinction of the honey bee in our State, and to the extent that you appreciate the labors of the tireless little worker in the fertilization of your fruits and flowers you are interested in the defeat of this bill, and I pray you that your committee on resolutions draft a resolution condemning the bill, and that a copy of the same be sent to as many of your representatives at Lansing as convenient, and one or more copies to me.

The penalty for not complying with the proposed law is \$5 per day for every day they are allowed to remain after a written notice has been served.

Yours respectfully,

GEO. E. HILTON,

President Michigan State Bee-Keepers' Association.

The reports were accepted and adopted, and the convention adjourned *sine die*.

STATE FAIR OF 1887.

Some weeks previous to the holding of the Annual Fair, Sept. 19-23, 1887, at Jackson, the following circular was issued by the Secretary.

ANNOUNCEMENT.

For seventeen years the Michigan State Horticultural Society, through its methods in the offering of premiums, the careful work of its viewing committees, the definiteness of its rules and regulations concerning exhibits, and its honesty of purpose in advancing the horticulture of the State, has won for itself an honored name among societies of its kind. No State Society has given so large attention to the correct education of its members in the nomenclature of its fruits, and through our system of annual reports, quarterly meetings and branch organizations, the information acquired in the management of these exhibits has been imparted to horticulturists everywhere in the State.

The Fruit Catalogue of Michigan, developed under the auspices of this Society, is an authority for planters throughout the State. To continue the work for perfecting this catalogue by means of testimony carefully garnered from planters in all sections of the State, is a leading object of the Society.

In the offering of premiums it has been found that but few localities, which have special advantages, compete for the offerings, and the Society desires to secure an exhibit from every part of the State for purposes of comparison and with the object in view of bringing out the progress attained in fruit culture in every locality.

To this end it has been decided to offer no premiums, but to secure through societies, granges and farmers' clubs, collections of the best fruits from every part of the State.

The Society will issue circulars of suggestions, concerning the picking, packing and forwarding of fruit, pay all expenses and freight charges, and see that appropriate placards, labels and announcements are made in connection with every collection.

Every Branch Society is especially solicited to arrange for space at an early day. A chart of the hall of exhibition will be furnished on application, and it is desirable to arrange, some time previous to the Fair, the entire plan of the exhibition.

The Society is willing to expend its entire membership fund for 1887 in aiding branch societies and localities not favored with a horticultural organization in making this exhibit, and will employ every means within its reach to give publicity to the exhibits through the press, bulletins and reports.

The officers of the Society all stand ready to render any counsel and assistance in their power to make this the most complete showing of Michigan's horticultural possibilities ever brought together.

All communications with regard to the details of the exhibit, method of collecting,

packing and forwarding ; compensation for necessary outlay in collection, and gathering fruit, etc., and applications for space, should be addressed to Charles W. Garfield, secretary, Grand Rapids, Michigan, and they will receive prompt attention.

* * * * *

In response to this circular quite a proportion of the branch secretaries responded, agreeing to make exhibits, and a special arrangement was entered into with a number of these societies to make an exhibit, the State society agreeing to pay all expenses of freight, placing upon shelves, etc., and remit all fees to State society for the year to pay expenses of gathering and packing the exhibit.

THE EXHIBIT.

Twenty-one counties were represented in the exhibit and there was a spread of 3,000 plates of fruit. The plant show occupied the center of the hall and was all made by Mr. Joseph Blessing of Jackson, containing 1,100 plants. Every nook and corner of the hall was filled.

Entering on the east side of the hall at the left, was the agricultural college display of 172 plates of tomatoes and thirty-seven kinds of peppers. This was the most complete exhibit of this kind ever made in the world as far as recorded. This number of varieties was not represented, however, as some numbers were duplicates of the same variety, the seed having been obtained from different sources. For example, there is Trophy from American seed, and from English, French and German seed.

The collection embraced all the sorts grown in America, England, France and Germany. At the Agricultural college these tomatoes occupied an acre of ground. This is the second year of the experiment.

Arranged on tables the whole length of this side of the hall were exhibits from Berrien, Jackson, Lapeer, Eaton and Jackson counties, while Allegan, Wexford, Van Buren and Kent occupied the end farthest from the entrance, and several lesser exhibits from individuals.

The range of fruits spread by Lake, Antrim, Charlevoix, Benzie and Midland counties astonished even the old pomological veterans who have for years been claiming great things for this north country. An exhibit of Russian varieties of apples sent from Wisconsin attracted a good deal of attention, and the spread of over 160 varieties of grapes by T. S. Hubbard, of Fredonia, N. Y., was the centre of interest to the grape men.

Among the individuals that had been prominent in making the collections were Prof. L. H. Bailey, Agricultural College ; W. A. Brown, Benton Harbor ; D. G. Edmiston, B. W. Steere and E. W. Allis, Adrian ; C. A. Sessions and E. J. Shirts, Shelby ; W. R. Wadsworth and H. W. Davis, Lapeer ; Messrs. Griffith & Fuller, Eaton Rapids ; John C. Sharp, H. F. Thomas, and Mrs. D.

H. Ranney, of Jackson; Dr. C. E. Davison, Wayland; Elmer Lewis, Cadillac; A. G. Gulley, South Haven; W. N. Cook, S. M. Pearsall, Grand Rapids; A. G. Tuttle, Baraboo, Wis.; E. H. Scott and J. D. Baldwin, Ann Arbor; J. W. Van Deman, Benzonia; T. S. Hubbard & Co., Fredonia, N. Y.; Neil Munro, Elk Rapids; L. D. Bartholomew, Charlevoix, and a number of gentlemen at Luther, Lake county.

The Detroit Free Press in its account of the fair made the following pertinent remarks with reference to our exhibit:

The fruits and flowers of the State Fair are arranged in Pomological hall by the officers of the State Horticultural Society. There are no premiums offered in this division, the exhibit having been arranged with reference to bringing out the fruits of the newer counties. Twenty-one counties have displays of their fruits and large placards tell the observer the story of the exhibition.

The plant display, with accompaniments of bouquets, floral designs, cut flowers and carpet bedding is all made by Joseph Blessing, of Jackson, and Secretary Garfield says that "Joe's wife should always be mentioned in connection with his work, for she is so willing and expert a helpmeet."

The entire show in this department arises from the admirable organization of the State Horticultural Society and its branches here and there over the whole State, a society that is now in its seventeenth year, and never has asked assistance from the public crib.

A noticeable feature of the exhibition is the display of South Haven fruit in market packages, put up in the shape in which shipments are made to the large western markets.

The Grand River Valley Horticultural Society has a mound of peaches and grapes very deftly arranged upon a platform, indicative of the immense crop of these fruits marketed at Grand Rapids during this year.

It is the general impression that this exhibit, although not as scientific as usual, is the finest in general appearance made by the society since the marvelous exhibit made the first year of the State exhibition at East Saginaw.

The following notes were made by the secretary during the exhibit:

T. S. Hubbard & Co., of Fredonia, N. Y., make a display of the largest number of varieties of grapes ever exhibited in this country by one individual or firm. One hundred and sixty varieties are spread on the center of the north table in Pomological hall. They display all the tints and hues that grapes are wont to deck themselves in for holiday occasions. They are arranged upon the tables in a delightful manner and give the best opportunity for studying the characteristics of grapes that distinguish varieties. Messrs. Hubbard & Co. deserve a great deal of credit for affording Michigan people so efficient a means of studying the fruits of the vine.

One hundred and fifteen varieties of fruits are exhibited by the Eaton County Horticultural Society, represented by the president, H. D. Griffith, and the secretary, S. R. Fuller. In this collection are twenty-seven varieties of grapes, a good assortment of pears and a sprinkling of peaches, but the

king of fruits, the apple, makes the greater part of the collection. No worms are found in these fruits and the specimens are otherwise very free from blemishes.

Twenty varieties of Russian apples are exhibited from the orchard of A. G. Tuttle, of Baraboo, Wisconsin. This is a very interesting collection, as showing the hardy sorts that the fruit growers of Wisconsin are securing to take the place of the sorts grown so well this side of the lake, but which will not stand the more rigorous climate of Wisconsin. They are clear, beautiful specimens, and quite distinct in appearance from the other collections on the tables.

The Midland County Agricultural Society makes a neat little display of twenty-five varieties of apples brought by Mr. M. P. Anderson. The color of the fruit is fine but the codling moth has prematurely tinted a good many of the specimens.

The county of Charlevoix, through the secretary of its agricultural society, Mr. L. D. Bartholomew, makes an exhibit of sixty varieties of fruit, highly colored, with clean waxen surfaces. Among the varieties that give character to the collection are Maiden's Blush, Twenty Ounce, St. Lawrence, Rhode Island Greening, Wagener, Alexander, Bailey's Sweet, six varieties of highly tinted crabs, several plates of well ripened grapes and plums; a plate of tomatoes and several strings of corn, to show how well ripened these products are in this northern clime.

McNaughton & Blakely of Jackson have a very unique advertisement in an ideal plan of home grounds with lawn, trees, shrubs, walks and drives, a vegetable garden and other attributes of a city or village home. As an educational feature of the fair, this is certainly commendable, even if it is used as an advertisement, and appropriately finds a place in the exhibit of the State Horticultural society.

A year ago a few leading men at Luther, Lake county, asked me to go up and organize a horticultural society, saying they desired to begin at once to interest their people in the culture of fruits. They already had a few branches in bearing, but had little knowledge of names and methods of culture disseminated among the farmers. The society was organized and sends down to the State fair a most delightful exhibit of over one hundred plates of fruit; they were perfectly packed and certainly came out of the cases as bright as a dollar. For height of color and firmness of flesh these fruits will rank with any ever shown at a fair in Michigan. This exhibit is at the south end of the west table in Pomological hall and certainly no better advertisement could be made of the capabilities of Lake county. In the center of the display is a gigantic squash, weighing one hundred pounds, which nearly filled the barrel in which it was shipped.

Neil Munro, who captured more prizes than any other Michigan fruit man at the New Orleans exposition, sends down from Elk Rapids above fifty varieties of apples. There are no worms or blemishes about this fruit. The specimens are of even size, and Mr. Scott, of the State Horticultural society, who unpacked and displayed this collection for Mr. Munro, said: "This man knows how to select specimens as very few do in our State. No wonder he takes premiums, for he deserves them." Northern Michigan furnishes the finest specimens of apples in the world, and Neil Munro knows how to exhibit them.

A fine show of grapes and pears from E. H. Scott, of Ann Arbor; J. C. Sharp has twenty plates of pears and H. F. Thomas thirty varieties of peaches and grapes from Jackson county; the Benzie County Horticultural Society spreads 116 plates of apples and twenty-five plates of other fruits. The Grand River Valley Horticultural Society exhibits from Grand Rapids and vicinity a wide range of fruits, put in place by S. M. Pearsall; A. G. Gulley of South Haven shows 250 plates of fruit in packages, as shipped by the growers of western Van Buren county; these are peaches, pears, grapes and quinces. From Wayland, Allegan county, a collection of forty plates, principally apples, is shown, sent by Dr. C. E. Davison, secretary of the Wayland Horticultural Society. Wexford County Horticultural Society, although a young organization and situated very far north in the State, is delightfully represented by a collection of apples, pears and grapes, one hundred and twenty plates in all, and highly colored like all the fruit from the new orchards of the new country. The condition of ripeness of the grape shows that the people of Cadillac and vicinity need not do without even the more delicious fruits of their own growing. Wm. A. Brown, the veteran exhibitor from Benton Harbor, although unable to be present at the fair, forwarded a fine exhibit of fruit to represent him. His selections are always admirably made and the county of Berrien can usually furnish a large variety of the best to choose from. Lenawee County Horticultural Society, by its secretary, D. G. Edmiston and its treasurer, E. W. Allis, of Adrian, fills a goodly area of the table room with a collection of sixty-two plates of apples, thirty-one plates of pears, ten plates of peaches and thirty plates of grapes, all carefully named and of distinct varieties. C. A. Sessions, with the aid of E. J. Shirts, of Shelby, gathered the exhibit for Oceana county, and containing as it does eighteen varieties of plums, attracts a good deal of attention. Mr. W. R. Wadsworth of Lapeer has a collection of 110 plates which makes an attractive display. In it are seventy-eight plates of apples, eleven plates of pears, fourteen plates of plums and seven plates of peaches.

SEEDLINGS.

A number of seedlings were shown and examined by the executive board upon which the following report was made:

APPLES. No. 1, from Lake county, grown by E. McClosky, from seed of the Alexander. A September fruit of fine quality, apparently desirable and worthy of trial.

No. 2 from same party and same lot of seed. A winter market sort; value entirely dependent upon character of tree as to growth, hardiness and productiveness.

No. 5 from same party and same lot of seed; apparently a long keeper and desirable if tree has proper qualities. There were seven other samples from the same source that may prove valuable, but as the committee had no data concerning the trees that bore them, no definite recommendation could be made.

A seedling apple from George Temple of Lake county was tested and may prove valuable as a long keeper. It is evidently a market sort and worthy of further trial.

A seedling called Jaques, sent in by Wm. A. Brown of Berrien county was not considered promising.

PEACHES. Mr. C. Engle of Paw Paw showed two plates of seedling peaches from late Crawford seed. One the larger was not quite so high flavored as the other, but was apparently a very fine shipper. Both were considered acquisitions and worthy of continued trial.

GRAPES.—Two varieties of grapes were shown by George Hosford, of Ionia. One—a black grape with fine clusters, but not quite so comely as Concord—had a very large berry, with thin skin and less astringency than Concord. It was very juicy and of delightful flavor; 2-4 seeded. Too tender for market, but gives great promise as an amateur sort.

The second of Mr. Hosford's seedlings was a sweet white grape, rather better quality than Niagara, bunches under medium size; evidently a good keeper.

Mr. C. Engle, of Paw Paw, showed sixteen seedlings from the Salem. This was a notable exhibit, showing a rich diversity in color and flavor. Out of the sixteen samples at least twenty-five per cent were considered worthy of extended trial; and one kind, similar to Iona in color, pulp and vinous flavor, was exceptionally promising. One, which Mr. Engle calls Alpha, is very early, is similar to Lady, and may prove valuable on account of its extreme earliness.

EVENING MEETINGS.

On Wednesday and Thursday evenings meetings of the society were convened for purposes of discussion.

The attendance was not large and no papers were read. The following scheme was followed quite closely:

1. New and Promising Varieties of the Larger Fruits.
2. Value and Methods of Exhibiting Horticultural Products.
3. Renewing Old and Failing Apple Orchards.
4. Culture, Nomenclature and Varieties of Tomatoes.
5. Returns from Fruit Plantations—How Soon to Expect Them.
6. Michigan's Future as a Fruit Growing State.
7. Cultivation and Drouth.
8. The Wage-worker's Garden.
9. Suggestions Concerning Suburban Homes.
10. Possibilities of our Low Lands for Truck Gardening.

The first evening Mr. Lyon gave an account of the meeting of the American Pomological society, held the week before in Boston, Massachusetts. It was not a large meeting, but there were in attendance many very noted horticulturists. Acting President Barry, was absent on account of sickness. There was a large exhibit of fruit and plants, under the auspices of the Massachusetts Horticultural society, aside from the American society's exhibit. The papers presented were exceptionally good, nearly all taking the scientific side of Pomology. Resolutions of respect were adopted in memory of Colonel Marshall P. Wilder, who had been so long president of the society.

An excursion was given by the city to Governor's Island and the convention closed with a banquet.

During the second evening, Prof. Bailey, from the committee on experiment station work made the following report, which was adopted:

Recognizing the great importance of horticultural interests in the State of Michigan and appreciating the demand constantly made by intelligent fruit-growers and gardeners for experimental aid to their business, we recommend that the State Horticultural Society present to the State Board of Agriculture and others in authority the importance and necessity of applying a liberal portion of the funds to accrue from the operation of the Hatch bill to horticultural experiment. As an indication of the experiment needed by practical horticulturists we submit the following synopsis, and suggest that some one or more of the topics indicated may be chosen as a basis of continuous labor in the forthcoming experiment station:

- I. Experiments in the originization of new varieties of fruits, vegetables and ornamental plants.
 - a. By ordinary seedage.
 - b. By selection.
 - c. By crossing and hybridizing.

II. Improvement and maintenance of old varieties.

- a. By methods of tillage.
- b. By fertilizers.
- c. By change of stock, crossing and hybridizing.

III. Introduction and testing of new varieties and species.

- a. Promising wild fruits and ornamental plants.
- b. Japanese and Chinese plants.
- c. Russian plants.
- d. Domestic cultivated plants.

IV. Physiological researches.

V. Pathological researches: investigations concerning diseases of plants, especially in Michigan, peach yellows, rotting of plums and cherries, falling of the plum leaf, apple scab, tomato rot, potato rot, blackberry and raspberry rust, grape rots and mildews, strawberry rust, gooseberry mildew, lettuce mold, celery rust.

VI. Experiments upon the relative cost of methods of culture and upon manipulations, tools, etc.

Respectfully submitted,

L. H. BAILEY,
W. K. GIBSON,
A. G. GULLEY,

Committee.

DETERIORATION OF MICHIGAN APPLES.

Mr. E. W. Barber, of Jackson, in the *Morning Patriot* of that city, on one of the days of the State Fair, said:

“President T. T. Lyon, of the Michigan Pomological Society, who knows more about fruit than any other man in the Northwest, and perhaps in the United States, was interviewed by a correspondent of the *Free Press* at the State Fair on Wednesday, and presented some ideas that are well worth reproducing. It has been often remarked of late years that the apples of Southern Michigan are not as fine as they used to be. Many of the orchards are old and have been poorly cared for. Necessarily the quality of the fruit has deteriorated. Mr. Lyon says there has been some advancement and considerable deterioration. The farm orchards are not as good as formerly. An exhibition was held at Buffalo about twenty-five years ago and the fruit from Michigan, even of the commonest varieties, was superior in color, size, appearance and flavor to anything that the orchards of New York could show. At present the ordinary farm fruit is no better than that grown in the older places in the East. This result comes largely from the removal of the forests, the changed atmospheric conditions and the penetrating influences of wind-swept regions. Trees sheltered by wind-breaks or tracts of timber land thrive better and mature finer fruit than do trees in open and exposed fields. The finest apples, plums and pears of the ordinary varieties come from the northern counties of Michigan, where the ground has been but freshly cleared and much of the surrounding timber remains.

“With double the forest area we now have in Southern Michigan, no doubt the remainder of the land would be worth more for fruit and other crops than it is now, but there is a great need of new orchards of the best varieties of apples. Just now much

attention is being paid to the Russian apples, a few kinds of which are of known excellence, such as the Alexanders, the Astrachans and the Oldenburghs, and we understand that Mr. Lyon has been making them a subject of special investigation. His conclusions cannot fail to be of great value. Apple growing in the State, except on the part of a few men, has been of a hap-hazard sort of business, and orchards generally have been left to take care of themselves, and yet when well taken care of their commercial and above all their hygienic value exceeds that of any other like number of acres on the farm. The declining value of the wheat crop, so long our great staple, is a warning to our people that it is time they should begin to do something to conserve the future welfare of Michigan."

PROCEEDINGS OF THE ANNUAL MEETING HELD IN EAST SAGINAW DEC. 5, 6, 7, 1887.

A FULL ACCOUNT OF DISCUSSIONS, TEXT OF REPORTS AND FULL ABSTRACTS OF ADDRESSES.

The Michigan Horticultural Society had never held a formal meeting in East Saginaw for discussions. The only gathering under its auspices in that city was in 1885 at the State Fair, when the society held a wonderful exhibit of fruits. So, when an invitation was extended by the Business Men's Association for the society to convene during the same week with the State Beekeepers' Association, it was at once accepted and a movement set on foot to hold both conventions in conjunction. The result of consultation between the secretaries of the two organizations resulted in the circulation of the following

SCHEME OF TOPICS:

Monday Evening, December 5.

7:30 o'clock.—A Word of Welcome. Response. President's Annual Address. Discussion on "The Best Winter Apples for Home Use." Appointment of Committees.

Tuesday, December 6.

9:30 A. M.—Report on Vegetable Gardening. Intensive Culture of Ground in Vegetables. Quality in Vegetables as a Result of Culture or Soil. The Ideal Size in Vegetables. Lessons of the Last Season's Drouth to the Gardener.

1:30 P. M.—Report on Landscape Gardening. The Thorns as Decorative Trees and Shrubs. Success with Ferns for Out-of-door Planting. Bedding Plants and Their Management. Grouping for Effect. Carpet Bedding. Watering Lawns. Front Fences and Division Fences on City and Village Lots.

7:00 P. M.—Report on Entomology. Discussion on Insect Pests. Report of Our Delegate to the Washington Convention of Those Interested in Agricultural Experiments. Experiments in Pomology in Michigan.

Wednesday, December 7.

9:30 A. M.—Report of Treasurer. Annual Statement of the Librarian. Report of the Secretary. Election of Officers. Reports of Committees. Miscellaneous Business.

1:30 P. M.—Do Bees Injure Maturing Fruits? What Trees are Valuable for Honey and also Useful for Decorative Purposes About a Homestead? How Great are the Benefits of Honey-bees in Promoting the Setting of Fruits? How Does Bee-keeping Supplement Horticulture Commercially?

7:30 P. M.—Report of Last Convention by the Secretary. Financial Statement. The President's Annual Address. Appointment of Committees.

Thursday, December 8.

9:30 A. M.—Opening of the Question Box. Comb vs. Extracted Honey, by R. L. Taylor. Lessons from the Past Season.

1:30 P. M.—Observations Upon the Intelligence of Bees. Anatomy of Bees, by Prof. A. J. Cook. Question Box.

7:30 P. M.—How to Improve Our Bees, by T. F. Bingham. Marketing Honey, by John Rey. Reports of Committees. Adjournment.

The conventions were not largely attended, the local attendance being nothing, but the meetings were interesting and enthusiastic and very profitable to the participants.

The first evening session was informal, the arrival of trains being so late that delegates could not gather until too late for an opening session on Monday night.

*Tuesday Morning Session.*

The convention was called to order promptly at 9:30 o'clock, in the common council room. President T. T. Lyon occupied the chair and there were about 35 delegates in attendance. The secretary read the following letter;

GENTLEMEN: It is now definitely decided to hold the eighth meeting of the American Horticultural society in Riverside, Cal., commencing on Tuesday, February 14, 1888. Full particulars, giving railroad and hotel rates, programme, etc., given on application. Perhaps no point on American soil could have been selected for this meeting which would have offered greater attractions to horticulturists than Riverside in particular, and southern California in general. Eastern horticulturists should avail themselves of this rare opportunity of visiting California. The excursion in all its features promises to be one of the most pleasant and profitable of anything of its kind known to horticulturists.

Preliminary to taking this trip it will be necessary for all who go to become members

of the society. Two dollars (\$2.00) is the fee of membership, which should be sent to the secretary. This will secure all the privileges of the excursion, and a copy, free by mail, of the proceedings of the meeting when published. As further and special inducement, each new member will be furnished, free, a copy of volume II of the society's transactions, so long as the limited edition lasts.

W. H. RAGAN, *Secretary*,
Greencastle, Ind.

PARKER EARLE, *President*,
Cobden, Ill.

The Secretary announced the organization of the Independent Forestry Commission of Michigan, and outlined its work, saying that the law providing for this organization was an outcome of the work of our Society in that direction, and was written and pushed through the Legislature by a prominent member of our Society, Hon. N. A. Beecher of Genesee county. The Secretary, speaking for the commission, invited the State Horticultural Society to meet with it in joint convention some time during the latter part of winter at a place hereafter to be chosen.

On motion the matter was referred to the Executive Board and subsequently, by action of that body, the invitation was accepted. The following letter and scheme were next presented:

U. S. DEPARTMENT OF AGRICULTURE, }
DIVISION OF POMOLOGY, }
Washington, D. C., Nov. 29, 1887. }

Chas. W. Garfield, Grand Rapids, Mich., Secretary State Horticultural Society:

Enclosed is a schedule which has been prepared after much study of the printed regulations regarding the horticultural meetings in the States named therein and after considerable correspondence. It has been arranged with the idea of fixing upon a definite and permanent plan, by which the various meetings may be held without confliction as to the time.

You will see that the time arranged for the "winter meeting" of your Society is the first Tuesday after the second Monday in February. Do you know any reason why your Society may not meet every year at this time? A number of the States named have already agreed to the arrangement so far as they are concerned. It is unfortunate, and undesirable on the part of the fruit growers of Michigan and Indiana, that they should both meet at the same time this year, and if such an arrangement as is proposed in this schedule be carried into effect, it cannot occur again.

If this plan meets with your approval, will you please present the matter to your Society at its next meeting. This is simply an idea of mine for the promotion of the pomological interests of the country, in affording an opportunity for members and eminent scientists to meet with the different State horticultural societies.

Yours Respectfully,

H. E. VANDEMAN,
Pomologist.

SCHEDULE FOR ANNUAL MEETINGS OF STATE HORTICULTURAL SOCIETIES.

1st Wednesday in December	-----	Michigan (annual meeting).
" " " "	-----	Dakota.
" " " "	-----	Missouri.
2nd " " "	-----	Ohio.

SCHEDULE—*Continued.*

2nd Tuesday in December	-----	Illinois.
3d " " "	-----	Kansas.
" " " "	-----	Kentucky.
1st Tuesday after 1st Monday in January	-----	Indiana.
" " " " " "	-----	Colorado.
" " " 2d " " "	-----	Nebraska.
" " " 3d " " "	-----	Iowa.
" " " " " " "	-----	Pennsylvania.
" " " 4th " " "	-----	Minnesota.
" " " " " " "	-----	Western New York.
" " " 1st " " February	-----	Wisconsin.
" " " 2d " " "	-----	Michigan (winter meeting).

The communication was referred to the Executive Board, which subsequently reported that as far as our annual meeting was concerned the scheme could be adopted, but our winter meeting must be a movable session on many accounts, and we would always arrange it to not conflict with horticultural conventions of sister States.

The society next listened to the

ANNUAL ADDRESS OF THE PRESIDENT.

The close of the eighteenth year of the life of our society brings us again to an appropriate time for a review of its doings in the past, and for the devising of plans for another year's operations.

We are fortunate in the fact that we have an efficient secretary, who is our chief active representative, and, since he has mainly been the effective instrument in our past operations, much of the detail, as well as the result thereof, may be expected to appear in his report. Such being the case, we may be expected to limit our remarks to such past experiences as may be supposed to indicate the probable needs of the future; and to the suggestion of possibly new or desirable fields of future effort.

While, doubtless, more than nine-tenths of our entire population are more or less directly interested in horticulture, the actual membership of this society, which is the sole representative of that interest for the State at large, is less than one for each three thousand of our population, including, as we do, the entire membership of local auxiliary societies, together with the life members. Such being the case, the conclusion seems inevitable, that very many persons attend the society's meetings, and freely participate in its deliberations, while omitting the corresponding obligation, to assume the responsibilities of actual membership.

Such being the condition of affairs, and considering the fact that from membership fees must necessarily come the means to defray necessary expenses, this process of accumulating valuable information, at the expense of others, can scarcely be deemed creditable. As a possible partial remedy for so undesirable a condition of affairs, we last year suggested what we now again, and more earnestly recommend, that membership be regarded as taken in perpetuity, and that there be a recognized obligation on the part of a member to renew annually, his membership being suspended in case such payment shall be omitted. Such arrangement would tend to create the feel-

ing that the failure to renew a membership is discreditable, and therefore undesirable. To properly provide for such a regulation (*the phraseology of so much of Article VI of the constitution as relates to annual memberships should be amended to read:—Any person may become a member by paying to the treasurer the sum of one dollar; and by the subsequent payment of one dollar on or before the first day of January of each subsequent year. In case of failure or omission to pay such annual dues, the privileges of such member shall be suspended during the continuance of such omission.*)

A corresponding modification of the by-laws relating to membership in auxiliary societies would also become necessary.

The usual annual certificate would in such case become perpetual, with merely the addition of a provision for its suspension in case of omission to pay the annual dues.

While upon this subject, we may appropriately recur to the obvious fact that the horticulturists of to-day must, in the ordinary course of nature, soon give place to younger men, and that, if we scan the ranks of horticulture to-day, these coming men fail to appear in adequate numbers, while ladies, upon whose trained and discriminating tastes ornamental horticulture must ever very largely depend, may be appropriately compared to “angels’ visits.”

To fill these gaps in the army of horticultural volunteers it becomes necessary, if not even indispensable, that the young, not of the one sex only, but alike of both, be in some manner interested in the work of this society and that of its auxiliaries. Lack of success in this direction in the past indicates strongly that the problem is not easy of solution. An occasional paper or discussion on the subject, even with the aid of approving resolutions, has been brought to bear upon it, with no perceptible result.

While the finances of the society by no means warrant the expenditure of large sums of money to secure the desired result, we venture the suggestion that the offer of moderate premiums at our meetings, other than at the annual State fair, for exhibits of flowers, plants, fruits and even seeds, of such things as may be then in season, may perhaps by effective efforts to create the requisite interest, be made to yield returns in the way of increased memberships, sufficient to at least replace the sums thus awarded; while, if a portion of such offers be limited to girls or boys, or to young ladies or gentlemen of certain ages; and if even essays on appropriate subjects, to be written and read by the young of either or both sexes, be made the subjects for premiums, which may be either pecuniary or honorary, we could scarcely fail to, in a greater or lesser degree, awake an interest among the young in matters of a horticultural character.

Among the objects for which such premiums may be appropriately offered, we would suggest:

An essay on a specified subject, by a boy or girl of less than sixteen.

Bouquets, plants, flowers and fruits, grown, arranged and exhibited by young people, of specified age, varieties to be correctly labeled.

Boys’ or girls’ vegetable or flower plats to be planted, grown, exhibited, and varieties correctly named by the exhibitor.

Collection of vegetables or fruits arranged, named and exhibited by boy or girl.

Collection of seeds collected and correctly labeled by a gentleman or lady.

The same by a boy or girl.

Exhibitors in all cases to be members of the Society, whether local or general.

The, to me, obvious importance of this subject impels me to invite the careful and earnest attention of the Society to the matter, with the hope that it may lead to effective results in the direction indicated.

We may also, perhaps, profitably consider whether some modified scheme of similar general character may not be so adapted to the circumstances of auxiliary societies as to increase their efficiency; and perchance to even redeem them from the too common tendency to demoralization and inaction.

Within the past year we have had occasion to inquire somewhat carefully respecting the actual capacity of the newer portions of lower Michigan, as well as the Upper Peninsula, for the pursuit of Horticulture; and within the last few months opportunity has arisen to institute a somewhat close comparison in this respect between it and the regions in the same latitude farther west.

While the fact is unquestionable that, especially in the Upper Peninsula, there are large tracts of rough land not adapted to profitable cultivation, there is much land well adapted even to horticultural pursuits; and although the prairie soils farther west are generally more fertile, this advantage is, in a good degree, neutralized by increased liability to drouth, the diminished moisture of the atmosphere and the increased severity of the winters as we go westward, the combined influences of which render the culture of even the hardiest fruits westward of Lake Superior, a very precarious business. An additional obstacle to success there is also found in the blight, which attacks and often ruins the trees during the heat of summer—a malady which, if it exists at the north, in either of the peninsulas, is of so slight a character as to attract little or no attention.

With these favoring circumstances, coupled with the selection of thoroughly hardy varieties for planting, the occasional ventures in fruit culture, made mainly in connection with the mines, have already very effectively determined the practicability, in the Upper Peninsula, of apple, pear, cherry, plum and small fruit culture, where suitable soils occur for the purpose.

Under these circumstances, since the permanency of the mining interests is already assured, and the country is being rapidly opened by railroads, the development of both agricultural and horticultural pursuits must soon and rapidly follow; and the alternative will then be presented to our society either to extend a fostering hand to the new though distant interest, or to compel it to establish an independent organization of its own.

The problem may perhaps be solved by the adoption of a plan akin to those of Illinois, Iowa and perhaps other States; consisting in the organization of district societies tributary to a single central society, of which, as we infer, delegates from district societies are, for the time, at least, members.

The tendency of farm orchardists is, apparently, toward indifference respecting the correctness of their nomenclature, and even toward carelessness respecting the quality of the products of their orchards, provided the varieties be large, showy and productive; in forgetfulness of the general truth that these qualities are usually attained at the expense of delicacy of texture and flavor characteristics, more or less indispensable in both dessert and culinary fruits, while a slightly deficient productiveness will, for the family orchard or garden, become a matter of slight importance.

Similar but even more decided is the tendency of many if not most com-

mercial orchardists, who, finding that appearance rather than quality secures ready sales in the market, are prone to select and plant productive varieties, which are also good handlers and richly colored, with little regard for quality, insisting that educating the market to an appreciation of fine flavor or delicate texture is a too tardy process and, therefore, unprofitable; oblivious of the unquestionable fact that very many such varieties lack but slightly in productiveness or general profitableness, while the absence of the desired and anticipated qualities can only result in a more or less diminished demand on the part of the consumer, as well as an inevitable depression of prices.

But the unfortunate results of these fallacious ideas exert still another objectionable influence. The commercial orchardist, from the extent or prominence of his operations, comes to be accepted, at least by persons not well informed, as a pomologist; and, as such, his counsel is often sought and trusted, by the planters of farm orchards, and even of village and city gardens, as to the varieties to be planted for these purposes.

Reasoning from his accustomed standpoint, and if not, in fact, ignorant, at least thoughtless, of the diverse purposes for which such planting is intended, his lists are quite likely to be made up of sorts suited rather to the kitchen than to the dessert; if not in fact too indifferent for either.

As the natural, if not, indeed, the inevitable result of such methods, there occur, in the cases of but too many of the mainly commercial horticultural organizations, various and grave occasions to doubt whether their influence does not tend rather to lower than to elevate the standard of horticultural merit, if not practice also, and even, indirectly, to beget dishonesty and fraud in the details of the handling and marketing of fruits; such as the employment of tarlatan for the heightening of color, the short capacity and the facing of packages, the shipping of peaches diseased with yellows, in defiance of the law, and various other practices of similar tendency; the frequency of which has already rendered the honesty of commercial fruit culturists the byword of purchasers and consumers.

Another fruitful cause of the unwise selection of varieties to be planted is the general ignorance of varieties, among planters, and their ready acceptance of the advice of the nurseryman or of his agents; whose predilections are very likely to be for the vigorous, and therefore easily grown varieties, rather than for those of superior quality but of objectionable habit.

Notwithstanding the general assumption that societies as well as individuals are primarily amenable to the influence of the "money consideration," and although the efforts of this society, through its officers and members, at the annual State fairs, for more than a decade now past, have been given for a money consideration; we do not by any means admit that, in the performance of such labor, this has been the chief or most influential consideration. Although we cannot assume to speak for all who have been aided in this work, we can confidently state that at least many of them have done so, mainly for the reason that such arrangement opened a broader field, and a more effective opportunity for the improvement of the horticulture, and especially the pomology of the State, and of saving to its fruit planters some portion of the enormous waste consequent upon faulty selection of varieties and bad management of orchards, as well as upon the several other causes already referred to. As evidence that these efforts have been in a good degree successful, we may point to many palpable results already achieved; as well as to the high reputation of our State in such matters, in which its standing is "known and read of all men."

The joint arrangement for the continuation of this important work, which has been heretofore made only from year to year) must be made if at all, at the annual meeting of the executive committee of the State Agricultural society, to occur early in January next.

Circumstances, however, point to grave uncertainty as to the practicability of its continuance, and, for this reason, it becomes us to carefully consider in what other equivalent direction our future efforts can be bestowed, with the effect of securing the results heretofore accomplished, and at the same time continuing the advance so effectively begun; since past experience in our own as well as in other States assures us that, under the management of an exclusively agricultural board, little actual progress of a horticultural character is to be anticipated, while, with intermitted effort, retrogression must quite as certainly follow.

The almost exclusively commercial tendencies of societies as well as of individuals, especially in portions of the more exclusively fruit growing sections of the State, with their comparative indifference to strictly horticultural matters, aside from their more direct pecuniary bearings, presents for consideration the problem of the duty of this society in the premises; the problem being whether the whole matter is to be left in the hands of existing local organizations, whether we are to make the effort to induce the societies to reform and improve their practice, or whether the effort shall be made independently of existing organizations to impress the people with the importance of the subject, above and aside from commercial considerations.

While under existing laws much is being done in the way of collecting horticultural statistics, such collections are obviously intended mainly for purely commercial purposes, for which, doubtless, they are of much value.

As a means, however, of showing the actual horticultural importance of the State, they require to be more ample, and, at the same time, more specific.

Probably in few if any other northern States is so large a relative space devoted to family or farm orchards, while the areas occupied by commercial orchards and by small fruit plantations is believed to be equaled nowhere else save, possibly, in the seaboard States of New Jersey, Maryland and Delaware. To properly express the magnitude of these interests in the State, the areas devoted to each class of orchards, vineyard and small fruits, as well as the annual product and the value of each, should be separately reported. The product of farm orchards consumed upon the premises, being of necessity estimated, should be separately reported. The estimated cash value of the plantations in each case, including that of the land occupied, should also be given separately.

Still farther, in order to gain a correct knowledge of the amount and value of the yearly product of such plantations, both the quantity and the value of the annual product of each for the current year, should be accompanied by an average of such product for a series of years last past; since in no other apparent way can the discrepancies arising from yearly variations of the crop be equalized, and a just conception formed of the average value of such products and of the real or relative importance and the relative growth from year to year, of the horticultural element, in the wealth of the State.

Doubtless much might be done by the society, in at least a few localities, toward the collecting and digesting of such statistics, but to properly accomplish such a work, would require the searching and far reaching appliances of the State, while even these, in order to insure accuracy, as well as general

satisfaction, should be placed under the direction of a thoroughly competent horticulturist, to whom may also be committed the digesting of the same.

Should the subject be deemed to be of sufficient importance to require legislation, to warrant the hope of a satisfactory result, its presentation to the legislature should emanate from and be directed by the horticulturists of the State. In such a case, the subject should undergo a careful consultation and discussion; and upon mature deliberation, a thoroughly practicable and well digested system of recommendations should be prepared for submission to the legislature.

In such case, I recommend that the subject be referred to a committee instructed to report at or before the annual meeting next prior to the convening of the next legislature.

On motion of Secretary Garfield, the address was referred to a committee consisting of W. W. Tracy, James Satterlee and R. D. Graham, with instructions to report back to the society recommendations concerning the suggestions made therein. The first discussion of the morning was upon

THE BEST WINTER APPLES FOR HOME USE.

Mr. Garfield—Simply to open the discussion I venture the opinion that one of the best winter apples for home use is not planted by three persons in this convention. I refer to the Oakland. It is a fruit of excellent quality—originated in Oakland county in this State a good many years ago, but has not been disseminated to any extent. It is a good grower, an excellent bearer, and keeps well. I have a barrel of them in my cellar kindly sent me by Mr. Green of Eaton Rapids that is keeping well in this season when Spys, Jonathans and even Baldwins are decaying rapidly.

Mr. Lyon—The Shiawassee Beauty is a fruit that deserves mention in this catalogue—better than the Fameuse, it resists scab more perfectly than that variety of which it is supposed to be a seedling, and is a better keeper.

E. C. Phillips, Grand Rapids—My list of varieties for this purpose is Jonathan, Wagener, Red Canada, Northern Spy, Shiawassee Beauty and Rhode Island Greening.

Geo. P. Pepper, Wisconsin—The Red Canada we can grow pretty successfully within 30 miles of Lake Michigan, even on our side of the lake. The Wealthy is a good variety but overbears, and thus becoming reduced in vitality it succumbs to severe winters. Clark's Orange somewhat like Fameuse in its tendency to scab, but is a valuable sort with us. Pewaukee is a very good sort for our climate.

Mr. Pearsall—I think no list of winter apples to use is complete without the old Rhode Island Greening.

Prof. Bailey—Don't leave out the Westfield (Seek-no-futher). I put it in my cellar in preference to everything else. It is hardy, a good bearer, and although not handsome, it is like some plain featured people, good inside.

Mr. Pepper—And it is hardier with us than the Spy.

Mr. Lyon—I should dislike to leave out of this list the Golden and Roxbury Russets. They complete the round of the season until we have strawberries from our own vines.

W. W. Tracy, Detroit—Of all the apples presented me to eat in early winter, none equal the Hubbardston. It is not showy enough for market, but every man who has a tree knows it well enough not to try to sell the product,

for it is unexcelled for home use. I have found great difficulty in getting what I want for my own use.

Several other gentlemen strongly endorsed the Hubbardston.

Mr. Peffer—Perry Russet is a variety of considerable value, only it needs with us a choice of location. It wants a dry atmosphere—hence does better on knolls, while the Golden Russet thrives better on lower, more moist ground.

Mr. Lyon—I wish to speak a good word for the Melon, sometimes known as Norton's Melon. It is an apple of excellent quality.

R. D. Graham—Grimes' Golden is a favorite apple for home use with me. It is good quality, medium size, handsome color, a good keeper and fair bearer.

Mr. Lyon—I supposed it to be a shy bearer.

Prof. Bailey—It is as productive as the average of winter sorts that are dessert apples.

Prof. Satterlee—I am well pleased with Mr. Phillips' list, only I would put Northern Spy nearer the head of it.

Prof. Bailey—The Mother is worthy a high place in this list.

Prof. Satterlee—How about the McClellan? I have seen it at fairs and admired its quality and appearance.

Prof. Bailey—It is an apple of the Seek-no-further type and even better in some points.

Mr. Tracy—We do not usually state in a discussion like this, the specific purpose for which an apple is required, and thus often shoot wide of the mark. For instance we should, in discussing market fruits, consider the purpose to be subserved. If a yellow hotel apple is wanted, discuss varieties that come in this view; if a red hotel apple is wanted, an entire different set of fruits would come into the discussion. If we were more specific our judgments would be more accurately interpreted.

The chair here closed the the discussion and called upon Prof. W. W. Tracy for his

REPORT ON VEGETABLES.

The report of this committee has usually been a review of the claims made for and a report of the trials made with the various new varieties brought forward during the year, but I have thought it might be made more profitable to consider the past and present condition of gardening as an art; the tendency towards change; its desirability; and some suggestions for elevation of the art.

Just let us look at the garden of thirty years ago as compared with that of to-day. We all remember that old garden lying beside the road just beyond the house, and separated from it by a plat of grass; grass, mind you, growing as God made it to grow, just right to roll and tumble upon and not a smooth and shaven lawn guarded by a placard "Keep off the grass." Scattered here and there, through this green belt, were a lilac, or syringa bush or tree, beneath whose shade grew great bunches of lily of the valley and a few clumps of iris, phlox, or pæony, throwing up great masses of gorgeous and beautiful blooms. Just beyond this lay the flower garden, with rectangular beds and narrow earth walks, bordered by narrow boards or a row of stones, possibly by a narrow line of box; and in these beds great masses of larkspur, poppy, pinks, scabiosa, etc., not closely trimmed and planted so as to form

an American flag or a portrait of Mrs. Langtry, but growing naturally, and producing such profusion of bloom that one could pick great armfuls of flowers without fear of spoiling the effect.

Beyond the flowers were the beds 4 feet wide and 10 to 20 feet long, each filled with such vegetables as onions, beets, radishes or turnips, planted in rows across the bed and every part easily reached from the narrow paths. Beyond this were the cucumbers, squashes, melons, corn, potatoes, tomatoes and a complete assortment of the vegetables and herbs in common use. Around the outside, next to the stone wall, were the rows of currants, raspberries, gooseberries, etc., and on one side a bed of strawberries, while at the farther end, covering an arbor, were grape-vines, and back of all the orchard. As we call to mind this old garden how clearly we see the gardener who cared for it with such earnest love! How often we have walked with him in it! How many kindly talks we have had! It was then we confided to him our temptations and trials and received advice and encouragement that enabled us to overcome the one and bear with patience the other. I honestly believe that these old time gardeners have been the source of and have aided in gaining almost as many moral victories as the village church.

How interested we were in the growth of those vegetables, and how closely we watched the development of the tomatoes that were sent us from Philadelphia and compared them with those from our own seed. How eagerly we watched the vines for the first green peas between this garden and the one on the other side of the road, and how earnestly we championed our exhibit at the local fair. How often we were made the messenger to carry some of those fresh vegetables to a neighbor, and how often these gifts served as the means of developing friendships.

Now all this is done away. This garden is a thing of the past, and what do we have in its place? Two, three or five miles from the center of some large town, surrounded by a dilapidated fence on which are great signs urging us to buy these lots, sure to increase in value and bring wealth to every purchaser, we find a five or ten acre lot, on which is a tumble down cottage and barn. We drag open the gate and drive in, hoping that the chains at which two or three great dogs are tugging are strong. By our side, not three inches from the wheel track, is a long, narrow bed filled with young cabbage and celery plants, and on the other side a great bed of half an acre each of rhubarb and asparagus, and beyond this a quarter of an acre of hot beds filled with radishes and lettuce. Every foot of the rest of the lot, except barely room at the side of the house and in front of the barn to drive in and turn around (and this space is blocked by a great market wagon and two or three plows and cultivators), is occupied by long rows of onions, lettuce and radishes, which extend right across the path which formerly led to the front door and to the very door step, and as soon as they are pulled their places are occupied by cabbages and celery. As we drive in, the proprietor, a stout German, advances from the hot beds eyeing us suspiciously. We try to learn something of his methods, and can only bring out the fact that he asks so much a bushel for his lettuce and so much a bunch for his onions, and that he hasn't any tomatoes, melons or any vegetables, but those mentioned. Every morning before light he fills the great wagon with rhubarb, asparagus and green onions (often with only one of them) and drives to town. Before he gets there he is met by three or four buyers who ask his price, and soon the bargain is made and he drives to some basement and unloads. During the

day or the following one, a part of the load is packed in crates and shipped to some village or town 50 to 200 miles away; there it is displayed in a commission house and sold to retailers, who get it to the consumers in from one to four days from the time it was gathered. Another portion is sold to the local retailer who displays it that day, but does not send it to his customers until the next.

Now what is the result of this change in methods?

1st. *On the varieties used*—Could it be otherwise than to tend to the almost exclusive use of these varieties which have good market qualities to the neglect of others. That this is so, my acquaintance with the seed trade enables me to answer most positively in the affirmative. I believe it to be true that in most species of our common vegetables, where a dozen varieties are usually offered, nine-tenths of the seed sold is included within as few as three sorts; and that not more than one of these would be included in what a competent judge would consider the best six of the twelve varieties of the list, quality for the table to rule.

2d. *Influence on consumption*.—By giving large quantities of the particular vegetable suited to his soil, selecting the sort which is most profitable for market, and makes the best show there, without regard to its actual table quality, by delivering direct his entire daily product, the modern market gardener can put into the market his particular vegetables at prices which a few years ago would be considered much less than cost, and a general collection is made up from different localities, so that the city markets are filled with great quantities of fine looking vegetables at low prices, and city residents buy them freely. On the other hand, when the old time gardener or the farmer brings in his surplus he finds that he can get so little that he declares it is useless for him to grow them, and that henceforth he will buy what he needs, and so gives up his garden, but fails to buy as he expected and gradually gets out of the habit of using vegetables at all. The result is an increasing consumption of vegetables in the cities and larger towns and a decreased use in the villages and on the farms.

3d. *Its effect on the satisfaction of the consumer*.—Vegetables as now grown and brought to the table are merely articles of food, to which there is attached no interest outside of simply satisfying hunger; and all the enjoyment of tasting that which your own care and skill have developed, is lost. Again, the vegetables do not reach the consumer until long past the time that they can be called fresh, and so lack all flavor and quality, and people soon cease to care for them.

I have been surprised at illustrations of this in my own experience, one of which I will give. Situated as I am I have not the soil for producing the best celery and our market is full of celery which, when it left the ground, was better than any I could grow of that variety and much of it better than any I could grow of any variety, but during the past season I have sent fresh celery to at least ten families in Detroit, all of whom bought the very best the market afforded for their table, and the universal report has been, "O, I enjoyed that celery *so much*, it is so *different* from anything we can buy. I don't usually eat it but I liked that—I wish we could buy such. I would be willing to pay anything for it." So often have such reports come to me that I believe there is no opening in a horticultural way that promises such large pecuniary returns as the establishment near our cities of gardens where a variety of vegetables is grown and can be delivered fresh direct to the consumer.

4th. *The effect on the gardener and the art.*—I think it is self-evident that the tendency of this change is to make a mere vegetable grower instead of a gardener in the old sense; and to make gardening a mere trade instead of an art; to cause the producer to lose all pride in his product save as it brings dollars and cents.

This is evident in our exhibitions, the idea of which used to be, and theoretically is now, a friendly contest for acknowledgment of superior skill in growing, producing the exhibit.

But last year in our State fair (and it was the same at other fairs I visited) not 1-20th of the space was occupied with exhibits made with any such view; but it was all taken up by displays which were made up simply to take the premium for the sake of the money there was in it. A number of the exhibitors said frankly that they didn't grow them but collected them where they could, because the premiums would pay them for doing so. Can we expect or hope for any advancement in the art of gardening under such circumstances?

But what would you do about it? One of the ways of correcting the evil, and I think a perfectly feasible one, is to change the character of our premium list, giving much more prominence to exhibits by amateurs and making the awards attractive and intrinsically beautiful and honorary rather than of pecuniary value. Then I would amend the rules so as to throw about these amateur classes such guards and protections as have been found efficient in contests in bicycle and other clubs. I believe that in this way we can do much toward reviving interest in our exhibits and that it will be a pecuniary advantage to us as well as a furtherance of our great work in the interest of horticulture in our State.

Respectfully submitted,

WILL W. TRACY,
Chairman Committee on Vegetables.

Mr. Root, Ohio—When I was a lad it was voted by the powers that controlled matters, that my services were not very valuable on the farm, and I was turned over to my mother to 'tend garden. That kind of work didn't amount to very much either way. But mother and I made the garden a source of profit that surprised the natives, and the first year I secured a vote of confidence. I still garden for the fun of it. A few years ago we imported all the celery that was consumed in our town, from Michigan. While we have great regard for you people up here, we thought it shameful to be dependent upon you for garden products. We have become independent now, and raise our own celery. As I said I gardened for pleasure, still my surplus is sold to the less fortunate, and it is delivered by wagon in a fresh condition. This matter of freshness dwelt upon by Prof. Tracy is of great importance. We illustrated it on peas at our house. My wife contended that peas, to be at their best, must be picked and shelled immediately before cooking. We made the comparison and found it most emphatically true. Strawberries, fresh from the vines, are worth three or four cents more per quart. I made some money by taking advantage of this fact. Another strong point in this amateur gardening is the stimulus given the little people in this work.

Mr. Hilton, Fremont—The old garden touches tender memories with me. The delightful days I enjoyed with my mother in the morning of my life, are inseparable from the garden.

Prof. Bailey—Prof. Tracy has touched the key note in placing the stress

upon amateur culture of vegetables. It is a mistake to place the money outcome so prominently in advance of the heart work of the occupation. I don't know as more than a small minority of my students will be gardeners and farmers, and as far as my teaching them matters of gardening is concerned I don't care. But I do want them to absorb a love for garden operations, so that in whatever occupation or profession they may engage, they will carry their love for the garden with them and will not be without the comfort and satisfaction that can be secured in a home garden.

Robert Graham—I didn't like the garden as a lad, and got out of working there as much as I possibly could; and I believe this idea of putting a boy in the garden because he isn't good for anything elsewhere on the farm, although it may work wonders in individual cases, is a mistaken notion if made a rule of action. The chances are, if a boy is placed in the garden weeding onions alone during haying time, he will think it is "boy work" and drudgery; he will hate it when he begins and there is little reason for his changing his mind afterward unless a different plan is pursued. I belong to a gardener's family and I like the garden, but I do think in the management of the boys, the thing must be managed pretty deftly to prevent them from hating the garden on the farm. I wish to say a word about quality in vegetables. You can not get it in a muck bed. You may grow large and beautiful samples on well tilled muck, but the highest quality and the best keepers are secured on upland. Of course it is more expensive growing them on high land and some seasons, like the past one, failure ensues when the best conditions are not to be had, but the best vegetables are grown there.

Mr. Tracy—There will be a growing demand for vegetables of good quality and good prices will be secured for good articles; but the gardener must not only specialize on the quality but must grow a wide range of vegetables so as to be able to supply families with all the varieties they desire.

Mr. Root—The problem I have been solving is how to get the most on a small area. My land is worth \$1,000 per acre and I must crop two, three, and even four times in a season to get a fair interest on the land. Mr. Root here explained his system of growing early plants under glass and transplanting them with a cylinder of tin, thus reducing the shock of removal to a minimum.

Prof. Bailey—One of the surest and most profitable crops I have, is grown in spent hot beds. I have made the sash quickly pay for themselves in this catch crop.

Prof. Satterlee—I get a good deal of satisfaction from a small area devoted to a garden or a city lot, but to reap the highest enjoyment in this way a man must own the land he works. As a supplement to close office work there is nothing better than care of a garden.

Mr. Garfield—The people over in Grand Rapids don't want Mr. Root to educate the Ohio mind too rapidly in the home production of vegetables, for we now ship lettuce in late winter and spring by the ton to be distributed to consumers in Ohio; and as Ohioans are good pay we want to hold the trade.

Robt. Graham—There is everything in the proper selection of site and soil for a garden; and then in a dry season it is important that vegetables have room to grow. Over size in vegetables is to be deprecated.

Mr. Garfield—And yet it is the big vegetables that take the money at the fairs. Our judges can't be "up" on this matter.

Mr. Root—I grow some early potatoes and start them in the greenhouse.

I like to grow potatoes for 40 cents a peck, but it grinds to have to grow them for 40 cents per bushel.

Adjourned to 1:30 o'clock.

AFTERNOON SESSION.

The convention came together at half past one and as the first topic for the afternoon; Prof. James Satterlee was called on to make his report as chairman of the committee on landscape gardening. Prof. Satterlee responded by saying that he had chosen to present a paper on a matter to which he had given considerable study rather than make a formal report.

SOME RELIGIOUS AND SUPERSTITIOUS NOTIONS REGARDING PLANTS AND TREES.

BY J. SATTERLEE.

Among the many interesting facts we find in our study of mankind is the curious notions regarding objects about us. At a certain period in the intellectual and moral progress or condition of man, nearly every people have attributed supernatural powers to all the animate and inanimate objects about them. The various forms of animal life, plants, rocks, mountains, rivers, lakes, and all the varied phenomena of nature have claimed a share of this veneration. A part of this veneration comes doubtless from the inability of the savage to explain the various phenomena of the world about him; a part of it from the mysterious phenomena connected with life and death. The savage sees unconsciousness come over the form of his companion as in natural sleep; he sees a suspension of all the phenomena of life as in swoons and trances, from which he awakes after an hour, or it may be days, of unconsciousness; then comes that other sleep so like the last that the difference does not seem to be absolute until decomposition supervenes. These events are strange and unexplainable to the savage mind. Then he notices the world about him. The budding plant, the expanding leaf and fragrant flower, the towering tree, the gnarled forms and the writhing and creaking boughs of the forest in the storm, and the still small voices of the forest at rest. These all have suggestions of mystery and bring to the untutored soul the idea that some mysterious power is connected with it all that is beyond human comprehension. This veneration is the *feeling* that comes to man when he realizes the presence of the infinite. It is at this point that God reveals himself as the author of the external world about us, and as the great first cause of all the phenomena connected with it.

Ethnologists have defined religion to be a perfectly natural and normal feeling that comes to every man in the presence of what he deems to be the infinite. Superstition arises from the imagination in a dark and gloomy state. I had thought to separate these two ideas in the treatment of the subject before me, but find it more difficult than at first might be supposed. In all the information I can obtain upon the religious and superstitious notions regarding plants and trees in different authors, I find the two states of mind

used interchangeably, but in a way that makes nearly all the information applicable to the latter idea—that of superstitious notions.

At a certain stage of advancement all people seem to have been tree worshippers, but the religious notions have been replaced by superstitious notions, and afterward by the folk lore of the ignorant and the mythological stories of the poet. In the present enlightened condition of civilized man, he attributes the various phenomena of nature to light, heat, electricity, to chemical action, to gravity, and to other natural laws. In the primitive condition of uncultured man his ideas are vague and crude. The notion that to ghosts and spirits and supernatural beings may be attributed all the phenomena of nature, is almost universal. Such phenomena are looked upon as the soul of nature working out the actions of nature, as the human soul works the human body. It throws up the fire from the volcano, uproots the forest in the tornado, spins the canoe around in the whirlpool or dashes it upon the rocks in the rapids, and, inhabiting the trees, causes them to bud and blossom, to increase in size and tower into the awe inspiring monarchs of the forest. It is these early theories of life and its phenomena which have filled the world with the religious and superstitious notions in regard to plants and trees. Savage nations still hold to them, and many of the common people of civilized and enlightened nations are still influenced by them. Among the more enlightened and educated, physical science has superseded the old nature spirits and given them a place only in fairy tales and poetry.

In parts of the world where Hindu influence has prevailed the doctrine of transmigration of souls has given rise to many queer notions and observances. We hear among the Dayaks of Borneo of the human soul entering the trunks of trees where it may be seen, damp and blood-like, but no longer personal and sentient. The Santals of Bengal fancy that uncharitable men and childless women are eaten eternally by worms, while the good enter into fruit-bearing trees thus to bless mankind. The Brahmins of the Coromandel coast are described as eating fruit, but being very careful not to uproot the plant on which it grows lest they may dislodge a human soul. These notions are not confined entirely to Hindu countries at the present time, and in ancient times prevailed to some extent in Greece and Rome. On Loch Siant in the Isle of Skye is an oakwood which is considered too sacred to have a twig broken from it. Wherever a solitary cedar comes up in the midst of a grove of firs, or a clump of seven larches is found, the Samoyed approaches the spot with religious awe. The Ostiak deems the tree sacred whereon an eagle has built her nest for several successive seasons. No twig of the grove of the Munda Khol, a tribe of India, can be broken. On the other side of the Jordan trees may still be seen on which sacrificial gifts are hung.

In Africa the huge Baobab receives the offerings of the devout, and in Burmah the same custom prevails with the banyan. Taylor speaks of a sacred cypress worshiped in Mexico, Mollhausen of a great oak in western Colorado, Darwin and others speak of an ash at the outlet of Lake Superior, to which the Ojibways formerly brought their offerings. A pine tree upon Grand river was the divinity of one of the Ojibways, who came annually with his family to offer it gifts of corn. The African wood cutter who has struck the first blow upon a tree with an ax pours in some palm oil, so that while the tree-god stops to lick up the oil the wood cutter may run away for his life. The ancient Greeks peopled every grove with nymphs, and fancied them coming up to the councils of the gods and sitting in the pol-

ished seats, and the dryads growing with the leafy pines and the oaks, and uttering cries of pain as the woodman's ax touched the tree. The oak grove at Dodona constituted the most ancient oracle of the world, while a plane tree spoken of by Homer was said by Pausanias to be an object of worship. It is recorded of Xerxes that in his march to Sardis he became enamored of a sacred plane tree and adorned it with ornaments of gold and left a guardian to protect it, and that he lingered so long in the worship that he lost the battle that followed. The oak under which Abraham is said to have entertained the angels at Mamré became an object of extreme veneration to his descendants and was worshiped down to the time of Constantine. Both in Africa and Guiana there is a reverence for the silk-cotton tree, the natives fearing to cut it down lest death should speedily follow. In the New Zealand mythology Rata is rebuked and put to shame by the spirits of the forest for cutting down a tall tree divinity for his canoe. The Saxon word *wood-mare*, for an echo, is a relic of the days when Englishmen believed, as many barbarians do still, that the answering echo of the voice from the wood is an answering spirit.

Thus we see that these superstitions have prevailed over the entire world. In Europe especially they had a very firm hold. Canute passed laws prohibiting such worship, and Boniface, the apostle to the Germans, outraged the pious regard of the Saxons for a mighty oak by cutting it down in spite of their remonstrances. Many of the Christian priests were more politic, however, and allowed the pagan superstitions to entwine themselves about the Christian faith in various ways.

In European folk lore, which is undoubtedly a continuance of the older superstitious notions, the trees which occupy the most prominent place are the elder, the thorn and the rowan-tree or mountain ash. In Denmark a twig of the elder placed silently in the ground is a cure for toothache, whilst no furniture, least of all a cradle, can be made of its wood. The tree is protected by the elder-mother, without whose consent not a leaf may be touched, and who, it is believed, would strangle the babe as it lay asleep in its cradle. About Chemnitz elder boughs are fastened before the cattle stalls to keep witchcraft from the cattle, and wreaths of it hung up in houses on Good Friday after sunset are believed to confer immunity from caterpillars. The legend that the cross was made of its wood is evidently an after-growth of which we have so many examples, to give a Christian color to a heathen practice, for the elder was the tree which in heathen times was said to shelter the Prussian earth-god.

Like the elder, the white thorn was held an object of worship and was said to be scathless in thunder storms. In Switzerland and the eastern counties of England its flowers brought into the house are said to produce death. This is doubtless also a relic of the time when the tree was considered too sacred to be touched. The veneration for it was too deeply rooted in the minds of the people to be expunged and the church in time wound its own legend about it, and, by the fiction that our Savior was crowned with its thorns, deprived the worship of the tree of its heathen sting. The flowers are regarded as the emblem of hope, and were carried in the wedding processions, by the girls in ancient Greece, and laid upon the altar of Hymen, which was lighted by torches made of the hawthorn wood. The French have a legend that an old thorn in the churchyard of St. Innocent of Paris came into blossom a second time, on the day after the massacre of St. Bartholomew.

Other legends are told, one of which is that an old thorn at Glastonbury is one that miraculously sprang from the staff of Joseph of Arimathea, who after the burial of Christ came to England to establish the first Christian church. It sprang into growth and flower on Christmas day in answer to his prayer that a miracle might be granted, so that the people might be led to believe in his mission. The legend asserts that the old tree still blossoms at Christmas time.

These feelings of reverence that pertain to the elder and the thorn are still more intensified in regard to the rowan or mountain ash. Its leaves are still the most potent charm against the dark powers of witchcraft and magic. Highlanders insert crosses of it with red thread in the linings of their coats, and Cornish peasants still carry some in their pockets and wind it around the horns of their cattle, to keep off the evil eye. In Lancashire sprigs of it were hung up at the bed heads and the churn staff was made of its wood. It formerly stood in nearly every church yard in Scotland and Wales and crosses of it were regularly distributed at christian festivals as a sure preventive of evil spirits. The line in Shakespeare's tragedy of Macbeth, spoken by the sailor's wife, should be a rowan tree witch, instead of "aroint thee witch." It was spoken as a charm against the witch who addressed her. In some parts of England the dairymaid always drives the cattle to pasture with a wand of rowan tree wood. In Strathspey the sheep and lambs are made to pass through a hoop of this wood on the first of May. A little of it worn upon any part of the person is a potent charm against all the dire effects of witchcraft. These notions have doubtless descended from the heathen mythology, as it was called Thor's helper. The Danes always used some of it for their ships, to secure them against Ran, the great ocean god's wife, who always stood ready with her nets to carry away any capsized mariners. Bishop Heber speaks of a tree in India, an accacia, similar in appearance to the mountain ash, which the natives believe to be the most useful as a preventive of magic. They say it sleeps all night and is alive in the day time, but withdraws its leaves if anyone approaches to touch them. A sprig of it worn in the turban, or suspended over the bed, was a certain preventive of the evil eye. He says he is surprised that a plant so similar in appearance to the mountain ash should have the same superstitions connected with it in a part of the world so far away, and wonders which superstition is the father of the other.

The use of holly for decorative purposes in England at Christmas time comes perhaps from the old Teutonic custom of hanging the interior of dwellings with evergreens in winter as a refuge for the sylvan spirits from the inclemency of the weather. In Derbyshire the tradition obtains that according as the holly brought into the house at Christmas is smooth or rough the wife or husband will be the master. Holly that has adorned churches at that season is, in Worcestershire and Herefordshire, much esteemed, the possession of a small branch with berries being supposed to bring a lucky year. Lonicus mentions a notion, in his time commonly prevalent in Germany, that consecrated twigs of the plant hung over the door are a protection against thunder.

The worship of trees and plants was found in all parts of North and South America. The Indians were full of superstitious fancies in regard to them, and many curious incidents and observances are told by numerous writers. Many of the Indians disposed of their dead in the branches of trees. They

have doubtless all practiced the custom more or less. In Nicaragua the natives suspended the heads of sacrificed captives in the branches of trees. Some of the northwestern Indians believed that the souls of those who died a natural death were compelled to dwell in the branches of tall trees. The Ojibways believed that trees had souls, and, in pagan times, seldom cut them down while living, for they thought it put them in pain, and they could hear their wailing as they suffered. Schoolcraft, Jones and others frequently speak of these notions. Any tree which gave forth a sound from its trunk or branches was at once reported and soon came to be regarded as the residence of some local spirit. Kohl speaks of an Indian who had chosen a tamarack as his protector, because he thought he heard a remarkable rustling in its branches, which was evidence enough to him that a spirit was domiciled therein. Roman Payne says of the western Indian tribes, that if an Indian in passing through the forest should see a motion or shaking in a tree that he thought supernatural, he would address himself to it and report the same to the medicine man or priest of the tribe, who would advise him to go at once and offer sacrifice to the new deity. Payne also says that they believed that certain trees sent for sorcerers and told them how to shape their bodies into idols, and being installed in temple huts inspired their priests with oracles.

This spiritual vitality ascribed to trees even led to the belief in the descent of man from them. The Indians about Saginaw had a tradition that a boy sprang from a tree within which one of his ancestors had been buried. The founders of the Neztec monarchy descended from two majestic trees that stood in a gorge of the mountains of Apaoto. Bancroft also says the Zapotecs attribute their origin to trees, and their cypresses and palms often received offerings of incense and other gifts. The Chiapanese had a tradition that they sprang from the roots of the silk-cotton tree.

A legend of the Ojibways illustrates the morbid imagination of many of these children of the forest. The maiden Leelinau, whenever she could leave her father's lodge, would wander away to the remote recesses of the forest or sit in lonely revery upon a high promontory of rock overlooking the lake. In such places she would linger long, with her face turned upward as if she were invoking her guardian spirit and beseeching him to lighten her sadness. But amid all her leafy haunts none drew her steps so often as did a forest of young pines on the open shore, called manitowok or sacred wood. It was one of those places hallowed by the presence of the little wild men of the woods and the turtle spirits or fairies which delight in romantic scenes. Its green retirement was seldom visited by any others of her tribe, who feared to fall under the influence of its mischievous inhabitants. It had been the custom of Leelinau to pass many hours in this forest under a spreading young pine whose leaves whispered in every wind that blew, but most of all in that gentle murmur of the air at evening when the twilight steals on, the hour of all hours dear to lovers. While reclining pensively against the young pine she heard a voice addressing her. At first it was scarcely more than a sigh, but presently it became stronger and she heard it distinctly whisper: "Maiden, think me not a tree, but thine own dear lover, glad to be with thee in all my strength, with the bright green waving plumes that hang above thee. Thou art leaning on my breast, Leelinau. Lean forever there and be at peace. Fly from men who are false and cruel, and quit the turmoil of their dusty strife, for this quiet, lonely shade. Above thee I will

spread my arms, fairer than the lodge's roof. I will breathe a perfume like that of flowers over thy evening rest. In my bark canoe I will waft thee over the waters of the lake. I will deck the folds of thy mantle with the latest rays of the setting sun." Leelinan drank in with eager ear these magical words. Her heart was fixed; no warrior's son should clasp her hand. She wasted away till she disappeared from her father's lodge forever, but her figure is frequently seen, accompanied by her fairy lover, gliding through the forest of young pines.

Such stories as these are frequent in Indian lodge lore. It illustrates that feature of their religious imagination which gives a spiritual life and form to plants and trees. Pike speaks of many trees being worshiped by the Dakotahs. Charlevoix speaks of a tree in the province of Acadia on the seashore, extremely ancient, which was always covered with offerings. Many wonders were related of it and after the earth was washed entirely away from the roots upon one side, it still stood for many years, and after it fell into the sea the same honors were paid to it as long as any part remained in sight. On the banks of the Chata Uchee stood a wild fig tree which the natives had consecrated as an object of worship. The natives of Carolina held the Yaupon or wild-tea plant as sacred, and claimed that an infirm Indian discovered its virtues in a dream. Bancroft speaks of many of the ancient tribes of Mexico and Central America offering worship to trees, among which were the cypress, wild calabash and others. Darwin saw a tree near Siena de la Ventana which the Indians revered as the altar of Wallechu and suspended offerings of bread and tobacco from its branches. It was surrounded by the bleaching bones of horses that had been sacrificed and was a landmark in a dangerous passage. The Chibchas had a tree which they called Huacan or Holy wood, a large tree, the wood of which does not decay under water. According to their theory the earth was supported by pillars of its wood. Its wood was used by the Peruvians for their idols. The Calchiquas of Brazil worshiped certain trees which they trimmed with feathers in a similar manner to some of the North American tribes. These trees were such as attained a great size. One of our western tribes ascribed the origin of such trees to eagles' feathers which stuck into the earth as they fell. They regarded all trees with a superstitious awe on account of fire proceeding from their wood when rubbed.

Many of the mythological stories are curious and interesting. The Brazilians have a character called Mani. She was a child that died and was buried in the house of her mother. Soon a plant sprang out of the grave, in the root of which they saw the body of Mani, and which they named Mandioca, from Mani and Oca, house.

The Ojibways had the legend so beautifully told by Longfellow in Hiawatha, of Mondamin, the Indian corn. The same legend was told by other tribes in different forms. Among the Virginians the red clover, when it appeared in the fields of the white man, was thought to come from the blood of their warriors slain in battle and its blossoms to be colored by this blood.

Many of the agricultural ceremonies of the Indians originated in these same beliefs. A child's umbilical cord was cut over an ear of corn and the corn planted, typical of the continued life and the never ending circle of existence. The Pawnees sacrificed a female slave at their agricultural ceremonies and while the flesh was warm pressed a drop of blood upon the kernels of corn as they were placed in the earth. At Oajaca the priests devoted themselves to

the maize god and many ceremonies attended their annual festival. At harvest time they proceeded to the corn fields, selected the fairest and best filled ear. This they bore to the village, placed it upon an altar decked with flowers, sang and danced before it, wrapped it in a white cloth and then, with renewed procession and solemn rites, the magic ear was buried in the midst of the corn fields in a small opening lined with stones. The next year this was dug up and its broken remains distributed to the people as a talisman against all kinds of evil. Kohlin his Kitchi-Gami relates that one year there was such abundance of corn, that the Indians let it rot upon the ground and the children fought each other with the stalks and threw them in the mud. Soon want overtook them, and it was not till one of the tribe who had taken no part in the indignities offered to the corn, received a communication from a manitou, directing him as to what should be done, and abundant sacrifices were made, the spirit of the corn was appeased, and returned them abundant harvests ever afterward. The Miamis had a tradition similar to this, but in their case the spirit was offended because they threw the cobs of corn at each other in their play.

The Iroquois had three mythological characters in the form of beautiful sisters, the spirits of maize, of the bean and of squashes. Many of the tribes, when they gathered herbs, sacrificed to the spirit of the plant by leaving a part of it in the place left vacant.

Among savage peoples all plants that produce great nervous excitement or a state of lethargy are supposed to have supernatural power. In Peru tobacco was called the sacred hub, and throughout all America it was looked upon with reverence. It was used in all ceremonies and was the material which filled the pipe of peace. This reverence has extended until to-day, in some form or other, it is worshiped by a large part of the human race.

In Peru also the coca plant was looked upon with great veneration. It has an invigorating and stimulating effect when eaten, and is used as a charm by the Indians. When the mine of ore is too hard they chew some of this plant and throw it upon the ore. Fishermen put some of it upon their hooks and immediately have better success. It sustained an important part in all their ceremonies, whether religious or warlike, either for the smoke or for the sacrifice itself. During divine worship the priests chewed coca leaves, and deemed it useless to approach the gods without it. It was believed that any business undertaken without the benediction of coca leaves could not prosper, and to the shrub itself worship was offered. More than three hundred years of Christianity has failed to subdue this deep-rooted idolatry, and everywhere in Peru there are many traces of the belief in the mysterious power of this plant. The miners still throw masticated coca upon the hard veins of ore, and the Indians put leaves of it into the mouths of the dead to secure to them a favorable reception into the other world.

Nearly all the Indians had a great veneration for the plants possessing a poisonous or medicinal character. The natives of Culhuacan hung a small bag containing poisonous herbs about the neck of a child as a charm against wild beasts and diseases. Many plants like snake-root, sassafras, liverwort, lobelia, wintergreen, slippery elm and others possessing medicinal virtues were considered by the North American Indians as gifts of the Great Spirit. The Creeks had seven sacred plants, one of which was the blue flag. Other plants were used by hunters to charm their guns, and to render their bodies invulnerable in war. The Ojibways carried the buffalo-grass in their medicine bags to preserve their lives in battle.

This list of plants and trees might be much extended. For a part of it I am indebted to Dorman's *Primitive Superstitions*, and for some of it to Tylor's very interesting work on anthropology. The *Cyclopedia of London*, a work of wonderful research and interest, contains many sketches of the mythological stories of trees and plants of the old world, besides the accounts already given of the elder, the thorn, and the rowan. By the ancient Druids of England the oak was held to be a sacred tree, and when the mistletoe was found growing upon it, ceremonies of great solemnity were performed. They considered the oak as the type of the Supreme Being, and the mistletoe as the type of man, wholly dependent upon his Maker for subsistence, yet retaining an individual existence of his own.

Legendary and poetical allusions in regard to the rose alone are sufficient to fill a volume. It was dedicated by the Greeks to Aurora as an emblem of youth, from its freshness and reviving fragrance; to Venus as an emblem of love and beauty, from the elegance of its flowers; to Cupid as an emblem of danger, from the fleeting nature of its charms and the wounds inflicted by its thorns. It was given by Cupid to Harpocrates, the god of silence, as a bribe to prevent him from betraying the amours of Venus, and hence was adopted as an emblem of silence. For this reason it was sculptured upon the ceilings of drinking and feasting rooms as a warning to the guests that whatever was said in moments of convivialty was not to be repeated outside, from which, whatever was to be kept secret was said to be spoken under the rose. Some of the Greek poets assert that the rose was originally white, but that it changed to red from the blood of the feet of Venus, which were lacerated upon its thorns, as she ran to the aid of Adonis. According to others the color was from the blood of Adonis himself. The fragrance was said to be derived from the cup of nectar thrown over it by Cupid. Anacreon makes the birth of the rose coeval with that of Venus and Minerva. Another fable relating to the birth of the rose is that Flora, having found the dead body of one of her nymphs whose beauty and virtue could not be surpassed, implored the assistance of all the gods and goddesses to aid in changing it to a flower that all should acknowledge to be their queen. Apollo lent the vivifying power of his beams, Bacchus bathed it in nectar, Vertumnus gave its perfume, Pomona its fruit and Flora herself its diadem of flowers.

Other mythological writers ascribe its origin to the transformation of the beautiful Rhodante, queen of Corinth, who, to escape the persecutions of her lovers, fled to the temple of Diana, where she attempted to seclude herself, but, being forced from the sanctuary by the clamor of the people, she prayed the gods that she might be changed into a rose. Her request was granted, and the blushes which dyed her cheek as she came before the people's gaze are still universally admired.

A pleasant story is told of the oak which has been justly celebrated in all time for its majesty and beauty. Jupiter and Mercury when at one time traveling in disguise, were hospitably entertained by Philemon and Baucis, his wife. They lived in a poor cottage, and when the gods departed they asked what blessing they desired. Baucis answered that she would choose to die on the same day as her husband. Her prayer was granted. Their cottage was transformed into a beautiful temple, and when they had reached a good old age and were tired of life Philemon was transformed into an oak and Baucis into a lime tree. While the change was taking place they continued to converse lovingly together until the bark had closed entirely

around the bodies of the trees, and then their branches intermingled and shaded the entrance of the temple for many years.

But enough of the mythology and superstitions. Had I time to spare I would like to speak of a number of species of remarkable trees. I will only speak of two or three, although many others are worthy. One of the most interesting is the Baobab of Africa. It grows to a diameter of thirty feet, with a diameter of top of 150 feet and an entire height of only sixty or seventy feet. Its age has been thought to reach four thousand years, but fifteen hundred or two thousand are probably more nearly correct. The interior of the body becomes soft and spongy and is used as a receptacle for dead bodies in countries where it abounds.

Doubtless the most remarkable tree in the world is the Banyan or Indian Fig of India. The great pagodas are usually found near these trees and the Hindoos regard them as the type of the deity. One near the banks of the Nerbudda was once capable of shading seven thousand people. Its trunk reaches a diameter of eight or ten feet and its branches send down roots which hang perfectly loose until they reach the ground. They never cease growing, and when they reach the earth they take root and increase in size until they reach a diameter of two feet or more and seem like great props to the horizontal branches above. One contained three hundred and fifty of these larger trunks and more than three thousand of the smaller ones. The great tree still standing on the banks of the Nerbudda is supposed to be the one spoken of by Nearchus, the admiral of Alexander the Great. Southey gives a very beautiful poetical description of one of these trees in his *Curse of Kehama*, a part of which I will read.

'Twas a fair scene wherein they stood,
A green and sunny glade amid the wood
And in the midst an aged Banyan grew.
It was a goodly sight to see
That venerable tree ;

For o'er the lawn irregularly spread,
Fifty straight columns propped its lofty head,
And many a long depending shoot,
Seeking to strike its root.

Straight like a plummet grew towards the ground
Some on the lower boughs which crossed their way
Fixing their bearded fibres round and round
With many a ring and wild contortion wound ;
Some to the passing wind, at times, with sway
Of gentle motion swung ;

Beneath was smooth and fair to sight,
Nor weeds nor briars deformed the natural floor,
And through the leafy cope which bowered it o'er
Came gleams of checkered light.
So like a temple did it seem, that there
A pious heart's first impulse would be prayer.

The giant red-woods of California and the Eucalypti of Australia are remarkable not only for their great size but for their great height, sometimes reaching a diameter of thirty feet or more and a height of more than three hundred feet.

But it is not to their great size alone that many trees owe their fame. Their beauty of form, of foliage and of flower renders them noticeable and interesting to man. Many trees, when standing by themselves, are beautiful and awe inspiring; but when a mass of such trees, of miles in extent, are found together, as *were* found in this country, it is not to be wondered at that the primitive inhabitants, who believed in ghosts and omens and charms, should look upon trees with a feeling of reverence. Even to man in his best state of Christian enlightenment there comes over him a feeling of awe as he enters the "forest primeval." There seems to surround him an influence that he cannot explain. He stands in awe of the mighty columns that have stood for centuries, that have increased in size and strength through an unseen power, a subtle and mysterious power which we call life, that invisible and unexplained condition that makes a bond of sympathy between all the living things of the universe.

I have often envied those old French Jesuits and voyageurs who wandered over this land before the woodman's ax had despoiled it of any of its beauty. I think it a shame that, with all the original wealth of forest that covered this beautiful peninsula, that we have not a single county preserved inviolable from the desecrating hand of the wood cutter and lumberman. We, in this age, know more of the conditions of life than any who have gone before us, but with all our knowledge we have learned nothing to make us despise the heritage that has come down to us from the past. Dynasties have passed from the face of the earth and nations from the memory of man; cities of stone have crumbled into chaotic ruin, and iron tablets gone to dust since some of the monarchs of the forest now standing sprang into existence. The mysterious power which we call life has kept them upright, and we are filled with awe in their presence, as in the presence of the infinite.

Mr. Lyon—While at New Orleans I saw illustrations of a similar aerial growth to the Banyan tree, in two species; one was *Ficus elastica*, Rubber tree, which had developed the tendency very strongly.

Mr. Peffer—In Wisconsin our law is such for the restraint of animals that in villages and rural districts we are dropping out all unnecessary road and division fences. This improves the appearance of the home surroundings and tends to make better neighbors.

Prof. Bailey—Here in East Saginaw, I have found some capital illustrations of the desirability of removing front and division fences from premises. With a fine margin of grass between the walk and the pavement, the street is given the appearance of a boulevard, when actually the road bed is but 30 feet wide. In all these matters, involving landscape gardening principles, there are no definite rules that if followed will suit people. Landscape art is subjective rather than objective. If we can so arrange premises as to call up pleasant associations and imagery the end desired is accomplished. In the division of the topic under discussion I note carpet bedding. Probably there are no more perfect examples of this in the world than on Drexel Boulevard, Chicago; and still the effects were not pleasing to me. To be sure I was lost in amazement, over the wonderful ingenuity shown by florists in developing, out of growing plants, the unique and grotesque forms; still

no pleasant features were retained in my mind to carry away. The developing of the larger picture in the landscape is the truer art.

Dr. Whiting—The removal of front fences is all very nice, if one is forgetful of how soon his fine plants will be stolen, his flowers destroyed and his premises despoiled by marauders. How are we to manage this part of the problem?

Mr. Pearsall—I have had a good deal of experience with similar depredators on the farm and have always shamed them out of it. I think a right disposition toward this petty class of thieves will lead to a proper condition of things.

C. T. Rosencranz—I am glad that I live where good fences are kept up. I think good fences make good neighbors. With regard to the depredation of small boys, I can illustrate how I have succeeded with them. A group were found appropriating some hard, worthless apples in late summer and I came upon them. I explained that I did not allow people to take apples without leave, and told them if they had asked, I would have taken them to a fine Benoni tree and allowed them to fill their pockets with good fruit. This statement spread among the boys and I have had no trouble with thieves.

Mr. Tracy—My experience has been that the small boys know the exact position of the Benoni trees better than the orchard owners. My way is to turn upon the boys and show them that they have rights that are worthy of my respect. A great many children are taught to disrespect the rights of others because they are not allowed to possess things of their very own and over which they have absolute control. Just a word about watering lawns. I have watched a good many lawn makers in Detroit. The rule is to smooth off the yard, which has been filled with dirt from the excavation of the cellar; then steal some turf out in the suburbs, lay it down and set the sprinkler going, giving it just enough water to keep the green color in the leaves. This always results in disappointment. It pays to prepare the soil deeply and then either turf or seed. I prefer the latter, and when water is given soak the ground as a good rain would do. This induces the grass to root deeply, and renders the lawn permanently able to resist a drouth.

Prof. Satterlee—I see one of the sub-topics relates to thorns as decorative plants. I recall a combination of native thorn and bitter sweet as one of the happiest associations of plants for effect that I have ever seen. The English thorns are not quite hardy with us, but they are worth protecting for their beauty.

Prof. Bailey—Thorns are valuable for decorative purposes, (1) On account of showy flowers; (2) Leaf character; (3) Attractive fruit; (4) Delightful habit of the trees. The last two are the strongest points. The large fruited thorn (cock spur) drops its fruit early, because of the investment of insects, and so loses a strong point that would otherwise be in its favor. The smaller fruited species have not this fault, for they hold their fruit into winter. The forms of thorns are very marked and attractive, even in winter, when foliage and even fruit are gone. These trees are somewhat difficult to transplant and also difficult to start from seed, they germinate so slowly. By stratification of the seeds and allowing them to remain a year one can have fair success.

Mr. Garfield spoke of ferns as delightful accompaniments to the yard, and suggested an improvement upon the ordinary plan of planting them next the house. He would arrange a group of shrubbery for a background, and place

the ferns at the base of the group, so as to be in full view from the windows of the house. If the shrubs, like red osier, have a marked tint of wood that harmonizes with the delicate green of the ferns, so much the better. Nature does this grouping very nicely.

Mr. Root illustrated the ease with which ferns are transplanted. He was given the sphagnum on a marsh, if he would drain the water off permanently. This he did and drew home a large pile of the moss. Upon all sides of this there sprung up a wealth of fern fronds, making a most attractive mound. The children of the neighborhood were allowed to come and take specimens for their yards. These were transplanted with very little care, but rarely one died.

A rambling discussion ensued at this point, on transplanting and pruning ornamental trees. The following points were made: The best trees are those well grown in the nursery. In getting trees from the forest, or in truth removing large trees from anywhere, it is well to prepare a year ahead by cutting a trench about the tree and filling it with light litter. Then by careful removal, the check is very slight. Because occasional instances are recorded in which trees have been very carelessly handled and have lived, is no excuse for making this the rule. Tamping the earth very firmly about the roots is an important part of the work. There is more in the character of the day than the season of the year for transplanting.

Prof. Cook spoke of the importance of grouping trees naturally, even when planting them along the highway, intermingling varieties to produce pretty effects; and even saving an accompaniment of shrubbery about the boles of the trees, is a point worth making. He asked if it was safe to transplant evergreens from a distant nursery for transplanting.

Mr. Lyon—Yes; if not too large and they are properly handled and transported. It should be remembered in transplanting that every mutilation is a direct injury to the vitality of the tree. The ideal plan to follow in growing trees is to plant the seeds where they are to grow and do all pruning with the thumb and finger.

Robert Graham—I would like to ask if it will pay to remove quite large apple trees, say 15 years old, rather than sacrifice them?

Prof. Bailey—My father has done this successfully and I certainly should make the trial rather than lose good trees.

Prof. Tracy—I have had experience in removing a considerable number of quite large elms the past year. Of 120 that were removed under my personal supervision we lost but seven; and in every case of loss I could properly attribute it to exposure of the roots to frost without the accompanying protection of earth. The ordinary idea seems to be that if you will only give a newly planted tree water enough your whole duty is done. I am satisfied that more trees are lost from over watering than in most any other way. I feel, too, that not sufficient attention is given to the bodies of the trees. Really the body connecting the roots and leaves is the most sensitive part of a newly transplanted tree; and a careful winding with hay for protection and a discreet watering of the body and branches is of the utmost importance.

Mr. Peffer—I avoid allowing the roots to freeze or dry, make top and root proportionate, and water discreetly. I rarely lose trees. This is the whole secret of transplanting.

Prof. Tracy—I want to enter my protest against this eastern cry that the Norway Spruce is a failure as an ornamental tree. In Michigan we owe more

to it than any and all other evergreens. I have, since it has been talked about, as I have traveled over the State, photographed a great many Norway Spruces of all ages and under various associations, and I am a stronger friend to this evergreen than ever. Whatever reason they may have in the East for defaming the Norway Spruce, we have every reason to befriend it in Michigan.

Prof. Cook—I would like to have Mr. Tracy tell how he would employ evergreens on the farm.

Prof. Tracy in a familiar way illustrated grouping for ornamental effects, for protection of barns and buildings, and for screens; he showed how waste corners of fields and angles in the farm could be utilized very effectively with evergreens.

The president announced the following committees:

On exhibit—A. G. Gulley, South Haven; E. C. Phillips, Grand Rapids; H. D. Cutting, Clinton.

On resolutions—L. H. Bailey, jr., Agricultural College; J. A. Pearce, Grand Rapids; C. A. Sessions, Mears.

It was suggested that there be a committee to nominate officers for the ensuing year. Thereupon the society selected as such committee: A. J. Cook, Agricultural College; C. T. Rosencranz, Flint; R. D. Graham, Grand Rapids.

Mr. Pepper was asked to describe the Wisconsin apples he had on exhibition, which he did, and at the same time responded to a running fire of questions from the audience. Society took a recess until 7:30 P. M.

EVENING SESSION.

The convention was called to order promptly by the president at the appointed hour, and Secretary Garfield gave an account of his experience in trying to interest the educators of the State in

THE EMBELLISHMENT OF SCHOOL PREMISES.

He said that at our February meeting in Hillsdale, one of the most interesting and clearly cut discussions, was upon this subject; that the society, after becoming wrought up by the enthusiasm of Profs. Drake and Haynes, passed resolutions instructing the secretary to correspond with Supt. Estabrook, of the Board of Education and president of the State Teachers' association, urging that this matter be given prominence in the State institutes and conventions. He said that he had done all this, but there seemed to be no disposition on the part of those bodies to act in the matter. It was his own view, that whatever we attempted in this direction be independent of educational organizations in the State. The value of X in a complex equation, or the method of making a strong sentence was thought of more importance than the pupils's surroundings.

Mr. Lyon—I still believe that our most promising method for success in this direction lies in securing stimulating legislation. Let the legislature provide that in cases where a certain amount is expended in successful orna-

mentation of rural school grounds the State will add a certain amount in money to continue the embellishment. The influence is worth the attempt.

On motion a committee consisting of W. K. Gibson, of Jackson; Edwin Willits, Agricultural College; and the Secretary of the Society was raised, charged with the duty of preparing a suitable memorial to the next legislature, in the line of President Lyon's suggestion.

Prof. Tracy questioned if it would not be more wise to work from the other way, by inducing the children to take hold of the matter and become owners of the embellishments. He recalled the successful attempts by the society in this direction some years since, and believed it would be well to renew this method.

President Lyon called Mr. Tracy's attention to the fact that this was just what he believed in, and any stimulus by legislative enactment should have in mind the part the children may do in aiding the work.

Prof. Thomas, of the East Saginaw schools, said that his ideas regarding the rendering attractive of school premises had undergone some modification, as a result of experience. He undertook, while at Tecumseh, to beautify with the aid of his pupils and had delightful results; but during vacation the flowers were destroyed and plants stolen, and even the bulbs dug up and carried away. Anything especially attractive was appropriated first. He had come to the conclusion that work of this kind needs to be confined to trees, shrubs and trailing vines—things that cannot be readily carried off. If this had occurred in a lawless community, he would have thought, perhaps, in a more law abiding region his plan would succeed; but the good people of Tecumseh are especially noted for rectitude.

Mr. Tracy—I would like to ask if the State Agricultural College could not, as a means of instruction, propagate ornamental plants and furnish them as gifts to schools that would accept and take care of them?

Prof. Bailey—That is just what we are very willing and glad to do. I am already sending out things for horticulturists to try that have been propagated as a part of instruction in horticulture, and I know we could with profit carry out Mr. Tracy's suggestion.

The committee charged with the duty of making recommendations on the suggestions in the president's message reported as follows:

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

Your committee would respectfully recommend that, in accordance with the suggestions of the address:

1. Exhibitions of horticultural products be provided for at each regular meeting of the society and that the Executive Board be requested to consider the feasibility of providing for the offering of some ornamental and attractive prize badge for horticultural exhibits at such regular meetings.

2. That the Secretary be requested to encourage the reading at our regular meetings of papers by young people.

3. That such portion of the address as refers to increasing the financial resources of the society be referred to the Executive Board.

4. That such portion of the address as refers to the work of the society in its annual exhibition and to its future action in regard to it be referred to the Executive Board, with the request that they carefully consider the feasibility of holding a horticultural exhibition the coming fall at which the

awards shall be for an extended variety of horticultural exhibits by amateur growers rather than large displays by professional exhibitors; and that the offerings be honorary rather than pecuniary in their character; and that the Secretary be requested to immediately carefully canvass Detroit and such other places as he may deem advisable to see what aid in the way of special prizes or otherwise can be obtained from business men of such places.

5. That we recommend that a committee consisting of the President, Secretary and one other member be appointed to develop and recommend some adequate system of collecting horticultural statistics.

6. We recommend in accordance with the suggestion of the President that the constitution be so amended as to make membership continuous and that no member shall be dropped without some formality.

Respectfully,

WILL W. TRACY,
JAMES SATTERLEE,
R. D. GRAHAM.

The report was accepted and adopted.

The chair now announced that the time had arrived for the report of the Entomologist, and Prof. Cook responded with the following paper:

REPORT ON ECONOMIC ENTOMOLOGY.

BY PROFESSOR A. J. COOK, AGRICULTURAL COLLEGE.

The past year, owing doubtless to the excessive and wide spread drought, has been one of marked interest to the student of economic entomology. It is a well recognized fact that drought is favorable to insect development, and damp and wet inimical to the same.

Fortunately Michigan is outside the area of chinch bug despoliation, and Hessian fly ravages, of which Michigan has had a generous taste during the past season, are not within the province of this association. Yet there are still enough topics to occupy the time profitably. I shall call attention to two questions. One, peculiarities of the season, and the other, new points brought out during the year which are of direct and of important practical interest to all horticulturists.

Before the past year, I have not heard of the rose chaffer as a serious enemy in our State beyond the limits of the lake shore along our west border, if I may except a limited area in the southeast part of the State. Yet I have known well that these terrible destroyers existed in small numbers all over the southern part of our State at least. Thus we have only to wait for a favorable era for their development, when a formidable outbreak may occur anywhere. The past season seemed this favorable time, for in several portions of the State these insects came in armies and worked serious havoc. While in the most places grapes suffered most, about Grand Rapids the peach growers were much injured. While in Oakland the corn crop was considerably damaged. It has long been known that while rosaceous plants are generally prefe red by this voracious beetle, still corn and other plants are often subject to its rapacity. This beetle, while it has done much harm in our State, has done far more along the Atlantic coast, especially in New Jersey. As is the case with its near congener, the May beetle, it lives as a grub in

the earth, and though it may do serious mischief in this State, if such is the case, it has not as yet attracted attention. Like the May beetle, this long, slim legged beetle comes forth in June, and often does immense damage eating the foliage from the shrubs, plants and trees. The May beetle often eats leaves usually of oak trees, but does not do any considerable damage like the swarms of locusts that occasionally devastate the western prairies, or the chinch bugs that come "1000 to the square inch," so these rose chaffers come in ruinous swarms, and that to cope with them is almost impossible. Our friends at South Haven say that these insects fatten on Paris green. I have wondered if this was not to be explained as follows: The Paris green poisoned thousands, but millions were ready to take their place, and so the practical man thought these beetles proof against poison. Mr. E. S. Carman has had these beetles, and he states that he has put them to rout by the use of Pyrethrum, one tablespoonful to the gallon. Others have done the same thing to combat this plague and report a failure. Mr. Carman states that he has tried this remedy with entire success several times. If Mr. Carman's experiments were reliable, and I can hardly doubt but that they were, we must conclude that the other parties either had poor Pyrethrum or else they were less thorough in their work. We may certainly hope to try this remedy with profit in case this beetle continues its ravages in our State.

Another insect has attracted attention in Oakland county as an enemy of the potato. This is the curious insect very properly known as the mole cricket, *Gryllotalpa borealis* Burm. I have heard the same complaint of this cricket from northern Ohio in previous years. As this cricket lives wholly beneath the earth, it is very difficult to suggest any remedy. Yet from what I know of its past history, I can express with little fear of mistake the opinion that this cricket will not become numerous enough to do serious harm. From some observations I have made in taking up old faulty drains I am inclined to the opinion that this mole cricket prefers to burrow in moist land. If this is correct, potatoes planted in damp soil will suffer most. From what I could learn of the ravages this summer, I am confirmed in this opinion.

In 1880 the common Cotton Boll worm, or what is known in southern Illinois as the Corn worm, was reported to be working on the ears of corn in several parts of our State, though it was not abundant enough to do serious harm. The next year, 1881, this insect was very common and destructive, not only in various parts of Michigan but also all through the northern States. It will be seen that I called attention to the Corn worm, *Heliothis armigera*, in the report of this society for that year. I also expressed the opinion that, as it was a southern moth, I believed the caterpillars would not continue to do harm in our fields and gardens.

Events have sustained the wisdom of my prediction. If the history of those years is to be repeated we may expect quite a serious onslaught on our green corn next year. There are two broods a year. The early caterpillars work on the earliest garden corn in July, while the larvæ of the second brood work in August and September. The larvæ vary from greenish to pinkish and are faintly striped. The moths also vary not a little in color. They are usually yellowish with dark colored markings. The moths can be trapped by use of sweet liquids, also by lights, but, as they will not likely become common here, these remedies will not be generally practical, even if they are desirable.

I have so often referred to the Aphides—plant lice—that I need not describe the appearance life, history or serious nature of the attacks of these terrible

pests at this time. Nor need I refer to the fact that they are much more destructive in years of great drought. I will, however, refer to a very important discovery which we made last spring. We found that the kerosene and soap mixture which I have so often recommended and praised was equally efficient in destroying the eggs about to hatch as in destroying the lice. You all know that leaves attacked by these lice often curl up, and also that the foliage is a great obstacle in the way of thorough work in spraying any tree with a liquid. It is to be recommended then and urged that all pomologists, gardeners and nurserymen learn the entire life history of these pernicious sappers, and when a serious attack is threatened apply the kerosene and soap mixture early in spring just as the eggs are hatching. We tried this last spring on snow balls, apple trees, etc., with excellent results.

Right here I wish to refer to the able researches and valuable discoveries of Dr. C. V. Riley the past summer. By careful and very arduous study he finds that the hop plant louse, *Phorodon humuli* Schrank, *Aphis humuli* of most authors, exists on plum in late fall, during winter—as eggs—and in early spring as agamic females and for the remainder of the season on the hops also as agamic females. It seems that there are thirteen broods in a year. The lice of the 12th brood have wings and fly from hops to plums, and produce a 13th brood of apterous sexual females. A part of the 11th brood are males, and are late in maturing. These also wing their way in merry mood to the plums, where the nuptials are celebrated, after which the eggs are laid on the buds and in crevices, and under bark scales. These eggs mimic the bark very closely. The first spring lice, like all to 13th brood, are agomic females. This first brood—called stem brood—are a little larger, probably more prolific and with shorter legs, antennæ, and nectar tubes than the other broods. Each of these agamic females produces about 100 young, and average three per day. The 3d brood is winged and migrates from plum to hops. When the lice continue from 3d to 12th brood as wingless avouiporous females. When another winged generation is produced which migrates from hops to the plums.

It will appear at once that these discoveries are very suggestive. Do other plant lice do the same thing? Are winged lice special generations produced to effect migration? Will not destroying the lice on plum early entirely prevent the destruction or the loss of the hoplouse? Surely it will, unless, forsooth, there is some other tree or plant where the louse passes the winter besides the plum. Again, we see here the value of my discovery that the eggs and young lice are so easily destroyed. Lastly, we note what a field there is here for study and experimentation, just within this one family of insects!

The last insect I have to consider is one that has for the first time the past summer attracted attention as an enemy. I shall call it the cornstalk borer. It is a noctuid moth, which, both as a larva or caterpillar and as a moth, much resembles the cutworm moths of the genera *Agrotis* and *Hadena*. In several parts of Northern Michigan this insect did much damage in June, by boring into the young cornstalk, and causing it to wilt and die. The larva is faintly striped and of a sober color. The moth is known as *Heli Atra*, and so far as I can learn has never appeared in this role of destruction before. Thus each year brings some new enemy to our doors.

If this insect passes through a similar life history to that of the cutworms we can doubtless bate it with poisoned herbage the same as we can the

cut-worms; but if it feeds or is in future to feed wholly on the corn then, indeed, will it be a serious pest, and we shall have to trust to its natural enemies to hold it in check, which they will for the most part very likely do. Before closing I wish again to recommend the Dixon spraying nozzle, which I think the best ever made; also the Field force pump which every large orchardist should possess. This pump will also serve admirably to spray all trees with liquids and also to spray potatoes, etc., with liquid poisons.

Some one inquired of Prof. Cook how to make kerosene emulsion.

Prof. Cook—I take 1 quart of soft soap, 1 pint of kerosene and 1 quart of water. This is churned into an emulsion and will then readily mix with water. I take one part of this mixture to fifteen of water for application.

Mr. Lyon—Mr. D. B. Weir of Illinois plants native American plums among his orchards of plums, and although they are stung by the curculio, rarely one matures. In this way he protects his other varieties.

Prof. Bailey—I have a number of trees of *Prunus Americana* and the curculio seems to work in them full as badly as in the other sorts, and destroys them, too.

Prof. Bailey described the marked success the past season in using the Lockport pump and wagon attachment, in spraying the College orchards. The fruit was very free from worms and the expense of application very light.

Mr. Rosencranz—How about killing upon the early and late sorts in the same application?

Prof. Bailey—We sprayed Northern Spy and Red Astrachan at same time and found it equally effective on either variety.

J. A. Pearce—How shall we fight the thrips?

Prof. Cook—Stir them up, and while on the wing, spray with kerosene emulsion. Mr. Hanford, of Bristol, I believe, has been very successful in this method.

Robert Graham—I have practiced successfully the plan of throwing lime and ashes on my plum trees to drive away the curculio. I have a few peach trees close by my plum orchard and these are attacked by the curculio, and all the fruit destroyed. This plan, I know, does not recognize the fact that our neighbors have plum trees to be protected, but this is a sad and wicked world any way, and one's neighbors are sometimes left out in the cold in our calculations.

The president announced the next subject as

EXPERIMENTS IN HORTICULTURE,

and called upon Prof. L. H. Bailey, who said:

As a delegate from the State Horticultural Society, I attended the Association of American State Agricultural Colleges and Experiment Stations which convened in Washington, October 18, 19 and 20, 1887. The especial business of this convention was to discuss the provisions of the Hatch bill and to outline work of investigation which should occupy the attention of the States. Most of the older States were represented by one or more delegates, the attendance at the convention numbering over fifty persons. A spirit of enthusiasm and love of investigation pervaded the meeting, and there was a decided desire on the part of all present to use all the funds accruing from the operation of the Hatch bill in honest, faithful and consecutive

experimental work. A permanent organization was effected with the following officers:

President—George W. Atherton, President of the Pennsylvania State College, State College postoffice, Center county, Pa.

Secretary—C. E. Thorne, Director of the State Experiment Station, Columbus, O.

Vice-Presidents—Gen. S. D. Lee, President of the State Agricultural College, Agricultural College postoffice, Miss.; S. H. Peabody, President Illinois University, Champaign, Ill.; LeRoy Braun, President Agricultural and Mechanical College, Auburn, Ala.; M. C. Fernald, President State Agricultural College, Orono, Me.; George H. Cook, Director State Experiment Station, New Brunswick, N. J.

Executive Committee—Chairman, Major H. E. Alvord, Professor of Agriculture at the State Agricultural College, Amherst, Mass.; Hon. Edwin Willits, President of the Michigan Agricultural College, Agricultural College postoffice, Mich.; James K. Patterson, President State College, Lexington, Ky.; Charles W. Dabney, President State University and Agricultural College, Knoxville, Tenn.; Charles K. Adams, President Cornell University, Ithaca, N. Y.

A committee was appointed for the consideration of plans for conducting the stations in general. The report of this committee, after undergoing some modifications at the suggestion of the house, was adopted as follows:

"1. That all appropriations received under what is known as 'the Hatch bill,' should be applied in good faith to agricultural research and experiment and the dissemination of the results thereof among the people, and that any diversion of these funds to the general uses of the colleges would be a direct violation of the plain spirit and intent of the law, and an inexcusable disappointment of just public expectation.

"2. That the experiment stations specially referred to should be so far separate and distinct from the colleges that it shall be possible at any moment to show to any authorized inspector or investigator that all the funds from the United States under the Hatch bill have been expended solely for the purposes of agricultural experimentation according to the intent of the law.

"3. That every department to be known and designated as an agricultural experiment station should be distinctly organized, with its duties and control clearly defined, and with a recognized official head, whose time shall be chiefly devoted to this department, who should be on an equal footing with the other heads of departments or professors of the college, and whose compensation should recognize the fact that the duties of the position occupy every month of the year.

"4. That the publications of the stations should be entirely separate from those of the college. The quarterly or more frequent bulletins should give their readers the results of experiments as fast as completed, and only as completed, or as distinct chapters are completed. These bulletins should enlarge on those practical points, such as the improvement or restoration of soils, the development of plants and the breeding of stock, when suggested by work done, even to the extent of repeating well-known principles and facts, when these need to be taught."

Of this report, by far the most important feature is the first paragraph, which emphasizes the importance of using all funds solely for legitimate experimental work, and it is gratifying to know that the unanimous voice of the convention endorsed this sentiment.

The discussion concerning lines of experiment to be undertaken by the stations was devoted chiefly to problems pertaining to agricultural chemistry and stock feeding and breeding. Evidently the attention of very few of those present had been arrested by the need of horticultural experiment. This fact illustrates again the newness of horticultural pursuits as compared with those of general agriculture, and should make us all the more zealous that the needs of horticulture shall be fully appreciated. Yet the discussions before the convention recognized fully the fact that each State will have its peculiar problems for solution and that each station must determine for itself the line of experiment which it shall undertake. Probably none of the States will endeavor to carry on experiments in all branches of rural industry. It is evident, however, that but few will attempt anything of a comprehensive nature in horticultural experiment. This is reason the more why Michigan, a leading fruit growing State, should demand good work in this line. That the Michigan station may carry on valuable and consecutive research in the interest of the horticulturist, the horticulturists themselves must lend sympathy and encouragement and suggestions.

This leads me to remark that many horticulturists of experience do not appreciate the value or the need of research in horticultural matters. It would be entirely foreign to the purpose of this paper to enter into a detailed catalogue of the demands which the horticulturist needs to make of the careful experimenter, yet it will be well to consider, in a general way, the kind of research which the progressive grower should urge. We may roughly classify this research as follows:

1. Experiments in originating and introducing new varieties.
2. Experiments in methods of culture, fertilizers, tools, etc.
3. Investigation concerning diseases of plants.

Each of these lines of experiment includes many minor, subordinate features and problems. No one station can expect to investigate them all, nor even one of them to its fullest extent. Experiment in the origination of varieties, for example, includes the whole matter of climate, soils, and latitude, as they affect plants, the whole extensive and intricate subject of cross-fertilization and hybridity, the principles of selection, the influence of culture and treatment upon varieties, an intimate knowledge and measure of existing varieties and the needs of the horticulturists of the State. The whole subject is one in which very little definite, well-directed work has been done. Nearly all our improved varieties of commercial fruits and garden vegetables are the result of chance, so far as the cultivator is concerned. In floriculture, much definite work has been done, and that work gives great hope for similar work in fruit growing and vegetable gardening.

The study of plant diseases is no less extensive. It demands a peculiar skill in the use of the microscope and a long technical training. The fungi are almost without number and the investigator must have a general and accurate knowledge of them as a whole, before he undertakes specific investigations.

Taking into consideration our horticultural industries and the equipment of our Agricultural College, it is thought that Michigan will do best to confine its attention mostly to experiments in the origination of new varieties, especially by employing the known laws of crossing and hybridizing and the principles of selection. It should also give prominent attention to the improvement of native wild fruits and ornamental plants.

By the provisions of the Hatch bill, the experiments of all kinds are to be

carried on in connection with the Agricultural College. By using the facilities and apparatus already accumulated and by engaging the services of the men already employed in teaching and experimenting, a great saving of expense may be made and an immediate advantage in experiment will be gained. Yet the experiments may in some cases very properly extend into various parts of the State, by the detailing of certain investigations to competent farmers and fruit growers. This will be a necessary feature in the testing of many fruits and other plants.

President Lyon suggested that trials with our American varieties of plums and the Russian sweet cherries, similar to those inaugurated by Prof. Budd in Iowa, were promising. Some of our old and valued varieties of apples, notably the Esopus, Yellow Bellflower and Rhode Island Greening, are giving out in our State, and an investigation into the causes of this deterioration is important to pomology.

Mr. Rosencranz—An experiment station managed so as to test new varieties on various soils and under different conditions, is of the utmost importance to planters.

At this juncture the committee on nominations made its report as follows:

Your committee charged with the duty of recommending suitable officers for the ensuing year respectfully report the following names:

For President—T. T. Lyon, South Haven.

For Secretary—Chas. W. Garfield, Grand Rapids.

For Treasurer—S. M. Pearsall, Grand Rapids.

For Members of the Executive Board—Ewart H. Scott, Ann Arbor, and Edwy C. Reid, Allegan.

On motion the report was laid on the table.

A communication was received from the Business Men's Association of East Saginaw, inviting the members of the Society to lunch at the Bazaar on Wednesday evening at 6 o'clock.

Accepted with grateful acknowledgments.

Adjourned for the day.

Wednesday Morning Session.

The meeting upon being called to order received a communication from the mayor inviting the members to visit the city buildings at an hour to be chosen by the society. Accepted for 11:30 o'clock.

The first work of the morning being reports of officers, the society first listened to the

REPORT OF THE TREASURER.

To the Executive Board and Members of the State Horticultural Society:

I have the honor to present to you my ninth annual report:

RECEIPTS.	
In the Treasury Dec. 4, 1886.....	\$1,236 06
Received from State Agricultural Society.....	1,400 00
Received from branch societies.....	157 50
Interest on bonds, mortgages, etc.....	115 00
Annual memberships.....	28 00
From all other sources.....	41 00

Aggregating \$2,977 56

DISBURSEMENTS.

Paid 38 checks, aggregating.....	\$1,994 12
Leaving balance Dec. 5, '87, of.....	\$ 983 44

LIFE FUND.

We have 202 life members, the fund of which is invested as follows:

Seymour mortgage.....	\$1,000 00
Lytell mortgage.....	300 00
Jacob Swell mortgage.....	300 00
Mrs. Mary J. Stearnes' mortgage.....	130 58
U. S. Bonds.....	150 00
Alfred Smith's note.....	140 00
Aggregating.....	\$3,020 58

All of which is submitted.

S. M. PEARSALL,
Treasurer.

GRAND RAPIDS, Dec. 4, 1887.

On motion of Mr. Rosencranz the report was accepted and referred to an auditing committee.

The President named as such committee: Messrs. Rosencranz, Sessions and Cutting.

Then followed

THE ANNUAL STATEMENT OF LIBRARIAN.

To the Executive Board and Members of the State Horticultural Society:

GENTLEMEN,—I have the honor to submit herewith my annual report as librarian of the State Horticultural Society for the year ending December 1, 1887. The following tabulated exhibit shows the number of our reports which have been received and distributed during the past year:

Years	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886
Number of books in Library Dec. 1, 1886.....	0	32	1	2	73	25	0	0	420	81	828	841	1,934	3,010	2,069	
Number of books received during 1887.....					2	18		1	77	2	3		14	12		6,000
Total.....	0	32	1	2	75	43	0	1	497	83	831	841	1,998	3,022	2,069	6,000
Number distributed		6			8	7			20	11	58	59	49	319	310	5,013
Number on hand Dec. 1, 1887.....	0	26	1	2	67	36	0	1	477	72	773	782	1,949	2,703	1,759	987

Reports for the years 1871 and 1877 will be gladly received if members have extra copies on hand.

On November 11, 1887, 500 copies of "History of Michigan Horticulture" were received from State printers and were distributed according to the direction of Secretary Garfield, thirty copies being reserved in the library.

The following books have been donated to the library and received through exchanges during the year:

HORTICULTURAL REPORTS.

Transactions of the Illinois Horticultural Society, 1886.
 New Jersey State Horticultural Society, 1886.
 Western N. Y. Horticultural Society, 1886.
 Montgomery Co., Ohio, Horticultural Reports, 1886.
 Minnesota State Horticultural Society, 1886.
 Iowa State Horticultural Society, 1886.
 Missouri State Horticultural Society, 1886.
 Ohio State Horticultural Society, 1886.
 Wisconsin State Horticultural Society, 1887.

AGRICULTURAL REPORTS.

New York Agricultural Ex. Station, 1886.
 Kansas State Board of Agriculture, 1885 and 1886.
 Pennsylvania State Board of Agriculture, 1886.
 Connecticut State Board of Agriculture, 1886.

MISCELLANEOUS.

Census of Michigan, 1884.
 Kansas State Crop Reports, 1887.

Received in June, 1887, 469 volumes of miscellaneous books from President T. T. Lyon. These books were the private library of President Lyon, and as such were donated to the Society.

Very respectfully,

T. H. FORSTER, *Librarian*.

The report was accepted and adopted.

The chair next called for the

SECRETARY'S ANNUAL STATEMENT.

Members of the Michigan Horticultural Society :

It is not with the idea of reaching over upon the ground of any other officer that I am constrained again this year to write out a more full statement than usual; but because I feel that there are some matters of historical interest that my associates may not touch upon.

OUR REGULAR MEETINGS.

The winter meeting convened at Hillsdale, and if we measure the success of a convention by the numbers in attendance from the immediate locality this meeting was a lamentable failure; but if our unit of measurement lies in the character of the papers presented it was a pronounced success. The report of that meeting will be to the readers of our volume for this year who could not be in attendance, a rich treat. There is no waste in it, and my only regret is that it was not productive of the enthusiasm in Hillsdale county that it merited. Owing practically to my own disability and other causes, perhaps it is needless to mention, we held no summer meeting save a meeting

of the Executive Board at Lansing, in June, when a visit was contemplated to the Agricultural College in conjunction with other organizations, but a storm prevented the consummation of this arrangement.

The evening meetings at the time of the State Fair were sparsely attended; one evening the weather was so inclement that no one was expected to attend.

The annual meeting is in acceptance of an invitation from the East Saginaw Business Men's Association and is the second time the society has met in this valley for discussion, the former meeting having convened at Bay City three years ago.

OUR VOLUMES.

The librarian's report will show the condition of the library, but allow me to supplement his statement with a few items.

The Lyon library, which was received as a gift from our honored president, will be kept separately from the remainder of our collection because we desire it to be used. For this purpose it will be placed at the Agricultural College, the volumes to be used simply as reference books.

Our report for 1886 was delayed in various ways and did not reach the people until April, but, as will be seen by Mr. Forster's report, the distribution has been very complete, there being on hand no more volumes than there should be for future calls. The volumes for 1887, I confidently expect, will be ready to send out the first week in January—earlier by two months than ever before. This is due to the fact that a large proportion of the volume is given up to a

HISTORY OF MICHIGAN HORTICULTURE,

the matter of which was prepared by our worthy president very early in the year and printed during the summer. A few volumes of this history have been bound in paper covers for the members of the society present at this meeting. The horticultural exhibit at

THE STATE FAIR

was a genuine success. There being no premiums, and consequently no sharp practices to secure awards, the exhibit had some novel features that prizes would not have brought out. The arrangement of fruit in the hands of the officers was more attractive than ever before, and I am satisfied that to secure the best results some modification of the plan of this exhibit is desirable.

EXPERIMENT STATION MATTERS.

Our society certainly did her part towards securing the enactment of the Hatch Experiment Station law, and in order to see that in the formulation of the general plan of work by the association called together at Washington for the purpose, horticulture should have a fair deal, we sent a delegate to that convention, and Prof. Bailey, whom we sent, was the only horticulturist in the convention, and he secured a place so he could be heard only on a technicality, by being accredited to the Agricultural College. But he did valiant service for our cause and was listened to with respect.

THE YELLOWS INVESTIGATION.

A year ago our society petitioned the Department of Agriculture to give some attention to the investigation of peach yellows. The petition was in the form of a letter from one of our members, S. S. Bailey, of Grand Rapids, and endorsed by our society. Commissioner Colman gave a listening ear and detailed a special agent, one of our own Michigan boys, Mr. Erwin F. Smith, to investigate the disease. Mr. Smith has worked in Maryland and Delaware, and Mr. Colman informs me that the work will be continued if appropriations are not cut off.

[FORESTRY MATTERS.

As a result of the agitation of the forestry question, one of our members who was in the last legislature pushed through a bill in the interests of forest preservation. Hon. N. A. Beecher, of Genesee county, has the honor of preparing the way for the Independent Forestry Commission, which has been appointed by the governor and is already organized and at work. The plan is to gather statistical matter and make recommendations to the next legislature for future action.

DELEGATES ABROAD.

Aside from the delegate I have mentioned as representing us at Washington, we had delegates at the annual meetings of the Indiana, Ohio and Wisconsin horticultural societies, also at the Ontario Fruit Growers' association. This fraternal exchange of delegates is to be commended so far as the condition of our finances will justify it.

OUR LOCAL SOCIETIES.

The action of the railroads under the inter-State commerce law in cutting off all courtesies to our society has prevented that intimate relationship heretofore existing between the parent and branch societies. Whether this or some other causes have been working I can hardly tell, but many of our societies are languishing and the best method of putting new life into them is a problem for immediate solution. Several of the societies, notably those in Kent, Lenawee, Eaton and Wexford counties are in a very thriving condition; others have not convened during the year. One fact is indisputable, that every society that earnestly adopts the plan of meeting at the homes of the members succeeds. My conviction is that the solution of this difficulty lies in adopting this system very generally.

FINANCES.

The following is an analysis of the Society's receipts and expenditures for the year closing Dec. 1, 1887:

RECEIPTS.	
From local societies.....	\$157 50
“ annual members.....	28 00
“ interest on life fund.....	115 00
“ State Agricultural Society.....	1,400 00
“ sale of fruit.....	40 00
“ “ of report.....	1 00
Total income of society.....	\$1,741 50

EXPENDITURES.

Expenses of delegates to kindred societies.....	\$195 88
Postage Secretary's office.....	33 08
Incidentals of quarterly meetings.....	47 56
For local societies.....	8 60
Exchanges in reports.....	7 10
Incidentals connected with volume '86.....	14 15
To Mr. Lyon for compiling history.....	300 00
Incidentals connected with volume '87.....	6 30
For printing, blanks, and stationery.....	28 40
Incidentals at State Fair.....	261 00
Executive Board expenses.....	148 44
Library.....	134 11
Treasurer's incidentals.....	3 50
Secretary's salary.....	800 00
President's postage.....	6 00
Total disbursements.....	\$1,994 12

In conclusion allow me to suggest that our society recognize the fact that one person cannot attend the duties of too many societies, and that we cannot expect to have a horticultural society thrive in a locality where a successful grange or farmers' club is organized as distinct from these organizations. Further, that the widest latitude must be given to horticultural societies organized where other rural associations do not exist. And we must recognize the fact that usually a successful society is built up by one or two persons who have genius for such work, and these people must be secured and enlisted in order to succeed. And our own society will succeed and maintain its position only by keeping up its enthusiastic enterprise looking toward the accomplishment of some special objects from year to year.

On motion the report was accepted and such parts as referred to the finances of the society were placed with the auditing committee for comparison.

The president next presented a paper in the form of a report upon

OBSERVATIONS IN THE WEST AND NORTH.

BY PRESIDENT T. T. LYON.

With the desire to gain a nearer view of some of the tribulations which are understood to environ the horticulture of the northwest, we started on the 12th of August for a visit to Wisconsin; going by the way of Grand Haven and via steamer to Milwaukee, thence by rail to Pewaukee, the home of George P. Peffer, well known throughout the northwest as a successful and reliable nurseryman and orchardist; and also as an acute observer, experimenter and originator of new fruits. We reached there by an early morning train, finding him at the station, and went at once to his place, where the day was spent in looking over his extensive plantations for both orchard and experimental purposes.

The location being but twenty miles from the west shore of Lake Michigan, though on the wrong side to enjoy the full benefit of its influence in winter, is still the recipient of important benefits as compared with the regions still further west and north. Many of the popular fruits of Michigan and the east are grown here with success, save that an occasional crucial winter, such as has several times occurred within the last few decades, proves too

severe for their powers of endurance, and thus betrays the fact that they are upon the extreme border of their appropriate domain.

Repeated adverse experiences of the character indicated have, long since, called attention to the necessity of originating new and hardier varieties, with the requisite ability to endure, unscathed, the occasional paroxysms of cold to which this region is liable. This process has now been going on for many years and has already developed some valuable results, not here only, but in the prairie regions generally. The Pewaukee, the Gibb and various others of Mr. Peffer's own originations, as well as the Wolf River, the Northwestern Greening, the Brier's Sweet, the Waupaca and perhaps others of Wisconsin parentage, are proof positive that this State is doing its share of such work.

Aside from this, Mr. Peffer entered early and earnestly upon the work of testing the ability of the Russian apples to meet the requirements of the soil and climate of Wisconsin. The trees upon his grounds, as well as his public utterances, indicate that his experiences with these have been not altogether satisfactory. It is claimed by Prof. Budd that the earlier introductions of Russian apples were mainly from the Baltic region—a locality whose climate is unlike that of the prairies; and that the actual parallel with the climate of the northwest occurs in eastern Russia, whence his and Mr. Gibb's more recent importations (which are mainly yet untested) have been derived. To what extent this may be true, and if so, how the future may modify past results, is a problem which only the future can solve.

Mr. Peffer has also engaged in testing more or less of the new varieties of the *Americana* species of native plums; which have, within the last few years, begun to attract attention; some of which, and among them the De Soto, especially, approach in quality the medium varieties of the *domestica* species.

On Monday, August 15, we were indebted to Mr. Peffer for a buggy ride of five or six miles, to Waukesha; at that time in its glory as a fashionable summer resort, with several thousand visitors thronging its spacious hotels, and drinking the cold, pure and limpid waters of its half a dozen (mineral) springs.

Taking the train from here, we passed through a settled and improved region; passing the rough but romantic summer resort of Devil's Lake, late in the day, and reaching Baraboo toward evening; where we called on Mr. A. G. Tuttle, so long and extensively known as probably the earliest importer of Russian apples; and one who, at the first, probably did more than almost any other person in testing and disseminating them.

The next day was spent here, in looking over the nurseries, orchards and vineyards. A plantation of Fameuse, from ten to fifteen years of age, showed signs of severe and ultimately fatal injury; said to be the effect of the cold of last winter. Red Astrachan, St. Lawrence and Early Joe were also badly injured, apparently from the same cause, while Alexander, Green Streaked, Zolotereff, Montreal Beauty and others had been seriously injured by fire blight.

Several varieties of Russian pears, from the recent importations of Prof. Budd, standing in nursery rows, were apparently in perfect health and vigor. A bearing orchard, including some eighty or more varieties of Russian apples, a large share of them carrying more or less fruit, was, of course, an item of special interest. Several of the early varieties were already past season, a few

were just in their prime, and others yet quite too immature to show their actual qualities. Several varieties quite favorably impressed us, upon a hasty examination.

The tops, and even the trunks of a few of the trees, were seriously injured by blight, which seems to become a serious malady when we pass beyond the reach of ocean and lake influence, apparently increasing with the latitude northward. Another orchard of Russian varieties, a short distance away, and upon still higher ground, was in full bearing and in apparently sound condition.

We took an early train on Wednesday morning, accompanied by Mr. Tuttle, to visit, with him, a cranberry marsh, comprising 1,080 acres, in an advanced stage of improvement, of which he is part owner. The process of improvement consists in dividing the marsh into blocks by means of ditches and dykes, so arranged that the upper one is employed as a reservoir to retain the water to be supplied as needed to the blocks below, while the waste is allowed to pass into a broad central ditch, which floats a flat boat of capacity to serve as the vehicle for moving material and for collecting the fruit when gathered. The planting is effected by flooding a block during an entire season for the purpose of killing all woody growths, and then withdrawing it and leaving the cranberry plants—already upon the ground—to take full possession, which is rapidly accomplished.

The portion of the marsh already improved was showing a fine crop of fruit, nearly ready for gathering.

The next objective point was Minneapolis, the ostensible headquarters of the Minnesota State Horticultural Society, where we expected to meet S. D. Hillman, its secretary. It appeared, upon considerable inquiry, however, that neither the society nor Mr. Hillman had an office in the city, but after diligent inquiry his residence was located, where we were very cordially received, and we subsequently became greatly indebted to him for personal assistance in making the acquaintance of President Elliott and other prominent horticulturists, and also for a visit to the State Farm, or rather, as we think they prefer to designate it, the University Farm; it, together with the educational facilities connected with it, being an appendage of the State University and under its control.

We do not understand that, at the present time, there are any students connected with the establishment, although Prof. Porter is in charge, by appointment as we were given to understand, of the board in control of the university. We were unfortunate in finding the Prof. absent at the time, but observed that the buildings were of a substantial character and that there was an apparently well kept vineyard, an experimental orchard, containing a considerable assortment of Russian and native apple trees, a small nursery for the supply of the establishment and also for distribution, together with several blocks occupied by vegetables grown, as we were informed, largely for experimental purposes.

The location of the city of Minneapolis was obviously determined by the manufacturing facilities afforded by the Falls of St. Anthony at this place, and this once celebrated falls has been so dwarfed by the diversions effected for such purposes that it has apparently ceased to be more than a very considerable mill dam, at least such is the case in ordinary stages of the water. The next objective point was Lake Minnetonka; a peculiar body of water, some fifteen miles west of Minneapolis, extending fully eleven miles from

northeast to southwest, and not far from six miles in extreme width; but so extremely irregular in outline and so broken up by bays and peninsulas, that scarcely can a point be found which is not within half a mile of land in some direction. There are many attractive locations, and several enormous hotels for the accommodation of summer visitors, as the lake enjoys a national reputation as a summer resort.

It was here, near the present village of Excelsior, that P. M. Gideon located at a very early day and commenced his efforts for the origination of a new race of apples, possessed of the requisite hardiness to enable them to withstand the extremes of the climate of the "cold north."

His location is upon the southerly shore of an arm of the lake, known as Gideon's bay. He commenced by obtaining from the State of Maine seeds of the Cherry crab, which were planted and the seedlings fruited. Seeds were saved from the finest of these, which were planted and these seedlings in turn fruited. This process has been repeated again and again. From the original lot of Cherry crab seeds sprang the Wealthy, which in his latitude (forty-five degrees) is in season from November to January, although further south it becomes strictly an autumn fruit. It has become extensively popular especially where great hardiness is requisite.

By the continuation of the process spoken of, Mr. Gideon has now originated a large number of varieties which he deems valuable for the north, among which he names Lou, August, Florence, Excelsior, September, Cherry Red, Duchess, Martha, October, Wealthy, Gideon, Peter and January, as being hardy enough to withstand a temperature of -40° and as affording a succession from the first of August till the end of February.

So important to Minnesota were the labors of Mr. Gideon considered that, several years since, the State purchased a parcel of land near him and placed him in charge, with authority to originate varieties and establish trial orchards thereon. This arrangement continued for a series of years, during which an extensive orchard was planted and grown to a bearing age, but owing possibly to the ambition or jealousy of others, aided perhaps by some of Mr. G's personal peculiarities, the arrangement had been closed, and the orchards left without supervision, the fruit plundered and the trees sadly injured. Meantime Mr. G. is continuing the process of origination upon his own responsibility, and now has a young bearing orchard on his own premises from which he will select seeds for planting in the spring of 1888.

The State of Minnesota showed, at the New Orleans exposition, a very fine collection of native grapes which had been grown at this place. To the surprise of many, the collection included well ripened Catawbas; which variety sometimes fails to mature fully, even two or three degrees farther south. While here, we made a hasty visit to the vineyard where these had been grown; which is very favorably located, on ground sloping rapidly to the east and south. The pruning is done upon a plan which greatly facilitates the laying down and covering of the plants in winter—a process which is indispensable here. Our visit here occurred on August 20th to 22d, at which date "Minnetonka grapes" were advertised for sale in the markets of Minneapolis.

A hasty visit to the grounds of Mr. Lucdlaiff, of Carver county, showed that his bearing orchards, containing some of the so called hardy Russian apples, had suffered sadly from the recent exceptionally severe winters;

although far from giving way to discouragement, he is busily engaged in the work of repairing damages.

The next objective point was further south, at Rochester, Olmstead county, where A. W. Sias is located, on an elevated tract of land, devoted to orcharding and a nursery. A visit to the orchards showed a discouraging array of supposed hardy varieties, which had yielded to the exceptional severity of recent winters. Even Mr. Gideon's Wealthy had proved no exception to this rule. Mr. Sias has, upon his extensive lawns and trial grounds, a considerable variety of ornamentals, both deciduous and evergreen; among which we noticed the *Catalpa speciosa*, which showed very slight injury.

A drive of a couple of miles, in company with Mr. Sias, brought us to an extensive orchard on quite elevated land, which had been planted, evidently, as a commercial venture. It occupies from forty to sixty acres of land, and is cut up by densely planted and well grown wind-breaks, into sections of from ten to twenty acres each. Although located on high and apparently favorable soil, and the trees yet comparatively young and vigorous, they, almost without exception, had suffered severely, in trunk or branches, or both; so much so, indeed, that there seemed little hope of their recovery—a sad illustration of the pursuit of fruit culture under difficulties.

The following morning found us at La Crescent, a small village on the Minnesota side of Mississippi river, nearly opposite La Crosse, in Wisconsin. This is the residence of John S. Harris, a prominent member of the Minnesota Horticultural Society, and a careful experimenter in pomological matters, who is located well up among the spurs of the high bluffs, in a narrow valley, well sheltered on the west and north.

On the steep southern slope of one of these spurs Mr. H. has a fine vineyard, containing many of the popular varieties, among which we observed Isabella, already in eatable condition, as were also Concord and several of the Rogers hybrids.

Several of the more recent plums, of the *Americana* species, were also in fruit here, although their season was now nearly past. Among these Mr. H. considered De Soto and Rollingsstone as highly promising. And here it may not be out of place to say that these varieties seem not to suffer from curculio, nor are they liable to the premature loss of foliage, or to the rotting of the fruit before maturity, which have, for many years, proved so fatal to the success of plum culture in southern Michigan, while the quality of several of these recent introductions will compare favorably with many of the popular varieties of *Prunus domestica*. Unlike the *chicasa* varieties, they also prove to be profuse and constant bearers, at the north. We regard them as eminently worthy of trial in our State, where this class of plums is also indigenous.

Mr. Harris's earliest plantations of apples were made upon the warm southern slope already mentioned, but the result has proved unsatisfactory, and he is now replanting upon the northeasterly or northerly slope. He, like many, if not most of the Minnesota fruit growers, is engaged in testing the newly imported Russian apples.

This place is adjacent to the south line of Minnesota, and the next move was down the west bank of the river, to McGregor, in the State of Iowa, and thence westward to Charles City, in northern Iowa, where a call was made on President C. G. Patten, of the Iowa Horticultural Society, who is a nurseryman here, and is engaged, moreover, in the origination and testing of such

fruits as afford promise of adaptation to the trying climate of northern Iowa. In the severe prairie climate of this portion of the State, even the hardest of the American apples prove tender, while, so far, the Russian varieties have failed to win a clear record for hardiness. So extreme is the difficulty here that Mr. Patten has, for some time, been engaged in the cross fertilization of several varieties of known hardiness with the hope to be able to originate varieties adequate to their local needs.

A half day's journey westward to Mason City, and an equal distance southward, thence to Ames, through a rich, fertile and well improved farming region shows an almost total absence of orchards; the general conclusion being that even the apple cannot be successfully grown.

On arriving at Ames we entered the only carriage at the station and asked to be driven to a hotel, but was informed that it ran direct to the Agricultural College instead, to which place we concluded to go at once. In passing through the town, Prof. A. S. Welch, formerly principal of the Michigan State Normal School, at Ypsilanti, became a passenger. After a needful preliminary recognition, followed a pleasant though brief revival of acquaintance; and, under his direction, we were driven direct to the residence of Prof. J. L. Budd, so extensively known as the agent of this institution in the importation of trees and plants from eastern Europe, as a means of supplying hardy varieties adapted to the severe climates of the prairie States.

Two or three days were spent here in carefully looking over the orchards and nurseries maintained here for the purpose of testing, propagating and distributing these introductions, which prove to be far more varied and extensive than we had been led to suppose; including, as they do, an extensive collection of ornamentals as well as of timber trees.

More recently doubts have arisen as to the hardiness of these introduced fruits in the climate of the prairie States, and also as to the probable influence of so extensive a transfer southward in hastening their season of maturity, rendering them summer and autumn fruits here rather than long keepers. It is, however, a noticeable circumstance that this latter objection comes mainly from the southern portion of the interested territory, where such result would necessarily be the most noticeable.

On the other hand, Prof. Budd claims that the tested varieties liable to such objection are, so far, mainly of the early importations, which came from the cooler and moister climate of the coast regions, while his later importations, which are yet partially or wholly untested, are natives of the drier and more extreme climate of the Russian steppes, which is, apparently, very similar to that of our prairie regions. He argues that, in the case of fruits, the season of maturity will be found to vary, not by parallels of latitude, but rather by lines of equal summer temperature, in which particular southeastern Russia, whence these varieties mainly come, is nearly identical with northern Iowa and southern Minnesota; as confirmation of the correctness of which claim, he states that so far as these later importations having yet fruited at the college, their season there has been very nearly identical with that in their original locality; also that among these recently imported varieties of apples there will prove to be an adequate supply of long keepers, for the region from central Iowa northward, while in southern Iowa the older native sorts are at least partially successful.

We had not, previously, been aware that the copious pomological memoranda of the lamented Charles Downing, which had been continued down to

nearly the time of his death, had passed into the hands of Prof. Budd. A cursory examination of a single one of the sixteen volumes of these memoranda shows a very copious collection of rare information respecting fruits, both old and new. We are not informed under what conditions as to publication the Professor comes into possession of this interesting and valuable material, but it would seem due both to the memory of their author and to the horticultural public that, at least, the more important particulars should be put into proper form and published.

On Saturday, September 3d, we visited Des Moines, where we called upon Hon. C. L. Watrous, the president of the American Nurserymen's Association, who, in consequence of remarks contained in his address before that body at Chicago, in June last, became involved in a newspaper discussion, respecting the adaptation and probable value of the new Russian fruits, especially apples, in the climate of Iowa.

In company with Mr. W. we looked somewhat carefully through his nursery and fruit plantations, using the knife freely upon an assortment of Russian apple trees planted in orchard some five years since, for the purpose of testing. These trees were labeled, and included several, at least, of what are reputed to be the hardiest of the Russian apples. The trunks of several of these, among which we recall Little Repka and Antonovka—two of the alleged ironclads—when cut through a little above the ground, showed very serious discoloration, and in some cases actual decay, such as must assuredly ruin the trees, so far as future usefulness is concerned.

The apparent injury, here, upon varieties which we had recently seen in an apparently sound condition in more northern locations, occasioned much surprise; since, from this latitude (about $41\frac{1}{2}^{\circ}$) southward, even many of the hardier natives are at least partially successful. The most probable reason for such result that occurs to us is that this locality is well down in the valley of Des Moines river; and that, for this reason, its winter as well as summer temperatures may be more extreme than those of surrounding regions.

The annual fairs of the State Agricultural Society are understood to be permanently located here; where, as we learn, the State has provided ample grounds and buildings. The programme for the fair shows that the exhibition of horses and horse racing is a special, if not in fact a leading feature of the fair throughout. There are, however, very fine exhibits in many other departments.

A commodious hall is provided for horticultural exhibits, of which fully two-thirds were occupied by plants and cut flowers, constituting a beautiful exhibit, while the remaining third was occupied by fruits, comprising from one to two thousand plates, consisting mainly of apples, with a few scattered plates of some of the new *Americana* varieties of plums.

The Agricultural Board in general charge of the exhibition retains also the control of the horticultural exhibit, together with the framing of its premium list and the awarding of premiums, save that a practical horticulturist acts by courtesy as assistant superintendent.

A meeting of the State Horticultural Society was held at its rooms in the State Capitol to consider a proposal by the Agricultural Board that the Horticultural Society accept the management of a portion of the grounds and plant and care for the same as an arboretum—an undertaking which, if efficiently and creditably conducted, would seem to call for expenditures largely exceeding what are understood to be its present available means.

The fruits exhibited at the fair are understood to have come mainly from the extreme southern portions of the State, and consisted largely of southern and eastern varieties, although there were a few Russian varieties shown, of which a notable collection was one of thirty-eight varieties from A. G. Tuttle, of Baraboo, Wisconsin.

The evening of the 7th found us on board a train passing rapidly through the beautiful farming region of eastern Iowa, on our way homeward, where we arrived on the evening of the following day.

After passing New Buffalo and coming within the State of Michigan, though not yet fairly within what is recognized as the "Fruit Belt," we saw more fruit within the first ten miles than we had observed during the past month in traveling through the four prairie States—Wisconsin, Minnesota, Iowa and Illinois—although within the last our opportunities for observation had been quite limited.

On the ensuing Monday morning, after three days at home, we started to attend the meeting of the American Pomological Society, to occur at Boston, Mass., on the following Wednesday.

The death of the late honored president of this society, since the occurrence of its last biennial session, in our State, rendered the meeting one of unusual interest and importance. In addition to this, the resignation of all official connection with the society by Patrick Barry, its first vice president, and the person generally proposed for president; and also by his son, W. C. Barry, the chairman of the Committee on Revision of the Catalogue; both of whom declined on account of feeble health, and the urgent claims of business, greatly increased the gravity of the occasion. The difficulty was farther increased by the inability of Secretary Garfield to attend on account of his health, and the pressure of other imperative duties.

The problem was, however, solved by the election of Prosper J. Berckmans, of Georgia, to the presidency, the re-election of Secretary Garfield and of Treasurer Benjamin G. Smith, of Boston, while your speaker was promoted to the honorary position of first vice president. The next biennial session was voted to occur in Florida, in February, 1889. The proceedings of the several sessions have been so generally published that they need not be given here.

The society adjourned late on Friday night, and Saturday morning found us on the Boston & Lowell (alias Canada Pacific) train, threading the mountain regions amid the now (for the time) abandoned summer resorts, occurring among the rock bound lakes of New Hampshire and Vermont. Reaching Newport, at the head of Lake Memphremagog, and just within the limits of Vermont, a call was made upon Dr. T. H. Haskins who volunteers to locate this region within what is designated as the "cold north." Newport, with its forty miles of lake scenery, accommodates summer resorters, with ample hotels, as also with steamers, boats and facilities for fishing and hunting.

A short walk brought us to the doctor's farm and orchards, which are carefully kept; and which contain not commercial varieties only, but, in addition, a good many trial kinds, among which are many of the supposed hardy Russians. From these he hopes to gather something capable of withstanding the trying winters of this vicinity, where we understand him to say the climate is more severe than in the neighboring valley of Lake Champlain. During the night before our arrival a frost had occurred, severe enough to seriously injure tender vegetation.

Leaving Newport early on Monday (Sept. 19th) a few hours ride and a

change of roads brought us to Abbotsford, the residence of Charles Gibb, the associate of Prof. J. L. Budd, in his visit to eastern Russia in 1882, and who, at the session of the American Pomological Society at Grand Rapids, Michigan, in 1885, was charged with the duty of rendering the Russian and other foreign names of recently imported fruits into names pronounceable by Anglo Saxons.

Mr. Gibb has extensive orchards here, largely of the Fameuse apple, which here seems especially successful, although not by any means exempt from its very general tendency to scab and crack. Preparations were at the time in progress for the annual exhibition of the Abbotsford Horticultural Society to occur during that week; and, among other matters, Mr. Gibb and a lady acquaintance were competing for the largest and most correctly labeled collection of seeds—an idea which might be very profitably acted upon by many other similar societies.

Mr. Gibb, although not conducting a nursery business, is still an active collector of novelties, whether in fruits, trees or plants, which are planted and carefully tested upon his own grounds and planted along highways and private drives. Among these may be seen many rare and beautiful things hardy enough to withstand this northern climate, which, however, is apparently less severe than that of even northern Vermont.

A short distance toward the south and in full view is a mountain 1,300 feet in height with a tower on the highest point, thirty feet high, from the top of which the Adirondack mountains of northeastern New York are said to be visible in clear weather, while in the opposite direction the mountains of Maine may also be seen. Mr. Gibb's premises lie upon the lower, gradual slope of this mountain, and the rich gravelly and naturally drained soil is thickly strewn with immense boulders, some quite upon the surface and others partially or wholly embedded in the soil, the whole being apparently the debris of the neighboring mountain. Although upon the lower, gradual slope, even this is very considerably elevated above the neighboring country which circumstance especially adapts it to fruit culture, and particularly to the culture of the apple, which is apparently a leading business with Mr. Gibb and also with most others in the more immediate vicinity.

The necessity to be in attendance at the Michigan State Fair, already in progress, compelled our early return, for which purpose the Monday night train was boarded, and Tuesday morning's light found us already past Toronto.

The recent rains had apparently failed to reach here, since it was still so dry that fire was running in the dry grass of adjoining fields which were brown from lack of moisture. This, however, became changed as we approached St. Thomas, where the fields were again green with fresh vegetation.

Arriving at Jackson late on the evening of Tuesday, the second day of the fair, the next morning proved to us that the confidence of the officers of this society, in the effective good will of its members and friends, had by no means been vain, and that its appeals to them had been abundantly honored in the bringing together of one of the finest of its many excellent exhibits.

ELECTION OF OFFICERS.

The report of the committee on nominations was taken from the table and, on motion, the society proceeded to ballot for officers for 1888.

Messrs. Geo. Hilton and H. W. Davis were appointed tellers and the vote, as announced, elected the persons nominated by the committee and thus that report was adopted.

The following was presented:

REPORT OF COMMITTEE ON EXHIBIT.

Your committee find on the tables a collection of four varieties of apples from Geo. W. Sorter, of Kingston, Tuscola county, embracing Northern Spy, Ben Davis, R. I. Greening and Talman Sweet, the varieties all in fine condition and color.

S. M. Pearsall has one sample each of Northern Spy and Fameuse, the latter a very fine specimen of the variety.

Geo. P. Pepper, Pewaukee, Wisconsin, has a number of seedlings of his own, one sample of the Russian varieties now being tested in this country, named Rohke; also samples of Wealthy, Walbridge, Northwestern Greening and a variety of crab, called the Gibb.

While these are fair samples and no doubt will be of great importance in his State, they are not such as would be used in this State. Mr. Pepper is entitled to great credit for the work he has done, and deserves the thanks of the society for placing these varieties on exhibition.

H. H. Hayes, of Talmadge, Ottawa county, shows some fair bunches of the Niagara grape, part of a crop of 6 tons from 480 vines.

While the bunches are very fine the keeping qualities are not as well shown as we have been led to expect of this variety. This same fault, however, is illustrated in many places and other varieties this year.

We find on exhibition a case in which to ship berries. It is much like those used east, where packages are returned, and is well adapted to the purpose, but is hardly adapted to that portion of our State which has to use a gift package, as it would be too expensive.

A. G. GULLY.

H. D. CUTTING.

The report was accepted and ordered printed in the proceedings of the meeting.

The committee on resolutions next reported and their report was adopted.

Resolved, That the State Horticultural Society hereby expresses its obligations to the Business Men's Association of East Saginaw, and to Mayor Youmans, for the invitation to meet in this city, and for the numerous courtesies which they have extended to the society; also,

Resolved, That we are under obligations to the members of the Michigan Beekeepers' Association for their hearty coöperation and participation in the sessions of the society; also,

Resolved, That we extend our hearty thanks to Mr. Geo. P. Pepper, of Pewaukee, Wisconsin, for his very interesting display of new and little known varieties of apples; and to Mr. H. H. Hayes, of Talmadge, Michigan, for the exhibition of good specimens of Niagara grapes; and to Mr. Geo. W. Sorter, of Kingston, and S. M. Pearsall, of Grand Rapids, for specimens of fruit.

L. H. BAILEY,

C. A. SESSIONS,

J. A. PEARCE,

Committee.

The auditing committee having compared the reports of Secretary and Treasurer and examined the vouchers and other papers, announced that everything was correct. Secretary Garfield next announced that the Executive Board had referred the following resolution which spoke the views of the board, to the meeting of the society for action:

Resolved, That it is the judgment of this board that the society in future place all rural organizations in the State on the same basis with reference to the distribution of its transactions, to wit: Any such society which will furnish ten memberships and \$10 therefor, with an abstract of its transactions of a horticultural character annually to aid in furthering the work of the State society, shall have sent by freight a box of 40 volumes of the State Horticultural Reports for the current year.

After a very full discussion the resolution was adopted with the proviso that the Secretary might, in his judgment, allow a less number of reports to be sent to small organizations upon the reporting of a proportionate number of memberships.

On motion, the society announced to the Beekeepers' Association that the joint meeting would be turned over so far as the State Horticultural Society was concerned to the officers of the Beekeepers' Association.

Adjourned.

Wednesday Afternoon Session.

The joint convention was called to order at 1:30 P. M. by President George E. Hilton of the Michigan Beekeepers' association, H. D. Cutting officiating as secretary.

DO BEES INJURE MATURING FRUIT?

Was the first question discussed. A considerable testimony was taken and nearly all of it was on the side of the bees. Mr. J. A. Pearce of Grand Rapids made a new point in their favor. He said that birds punctured a large number of his early grapes and the juice ran out, disfiguring the bunches, and he thought they would be entirely unmarketable. But the bees came to his rescue and sucked up all the oozing juice, cleaning out the injured grapes so that a slight brush would rub off the dry skins. Thus the unpunctured grapes were clean and he was able to put them on the market, securing fairly remunerative prices for them.

Prof. Cook would not say that bees could not or might not puncture grapes, but as yet he had found no authenticated instances. Several gentlemen said that bees when once finding out a hole in the epidermis of fruits would make the most of it, and thus became an annoyance to the fruit growers. In answer to the query:

WHAT TREES ARE VALUABLE FOR HONEY AND ALSO USEFUL DECORATIVE PURPOSES?

Prof. Cook, Prof. Bailey, Mr. Root and others placed the linden or bass-wood at the head of the list. Mr. Bingham said the character of this tree made it suitable to plant near dwellings.

The leaves came out late and dropped at the first frost, thus avoiding unpleasant shade when it was not needed; the leaves were borne at the ends of the branches so that the shade was that of an umbrella instead of a solid mass like the top of a maple.

Prof. Cook would plant basswood in groups for shelter and pleasant effects. Prof. Bailey said by cutting off a basswood one might secure a number of sprouts from the stump which would grow rapidly, producing the effect of sub-tropical foliage; and Prof. Cook suggested that this plan produced a wealth of blossoms from the same root. Mr. Root planted a number of years ago a basswood orchard of several acres which had proved a great success.

The tulip tree was named as a good honey tree and a grand lawn tree, but difficult to transplant, and the seeds did not germinate readily.

The Red bud or Judas tree is an excellent honey tree in the South and may be found on the banks of rivers in the southern counties in our State, but is not hardy north of the base line, although found as far north as Muskegon on the lake shore. It flowers early in spring before the leaves come out, is rich in honey, and is a most attractive lawn tree.

The maples furnish considerable honey, and it has the flavor of maple syrup. Mr. Hilton had a sample illustrating this fact.

In answer to the query:

HOW GREAT ARE THE BENEFITS OF HONEY BEES IN PROMOTING THE SELLING OF FRUITS?

there were a great many examples given where fertilization was aided by the carrying of pollen by honey bees. Many plants upon which bees love to feed will not produce fruit unless by the aid of insects. Nearly all plants of the *cucurbitaceæ* are of this character. Mr. Root gave an example of a large market gardener near Boston who always places a colony of bees in his cucumber houses.

Another gentleman spoke of the failure of squashes in some place where bees were rare. Others still gave examples in the family *Leguminosæ*, which contains beans, peas and clover, in which proper fertilization was not effected without the aid of bees. Even some of the larger fruits are aided materially by the proximity of an apiary.

Mr. Bingham spoke intelligently about the way in which bee-keeping supplemented horticultural pursuits. Prof. Cook said the trouble lies in the fact that bees need the greatest attention just in the season of small fruits, and were liable to neglect, or else the fruits would be neglected.

Mr. Bingham said he would not advise a fruit grower to go into bees extensively, but in a small way, with a very few colonies, and then make them do their level best.

Prof. Cook thought the best of work could be done in solving the problem of lessening the work with bees in the fruit harvest; the two occupations go so naturally together that this problem assumes great importance. Numerous instances were cited in which successful fruit growers were expert bee keepers.

At 5:30 o'clock the meeting adjourned to lunch at the Bazaar, following which the horticulturists separated to go to their respective homes, leaving the balance of the convention to the beekeepers in their specialty.

REPORTS
OF
LOCAL SOCIETIES
AUXILIARY
TO THE
MICHIGAN STATE HORTICULTURAL SOCIETY.
1887.

REPORTS OF AUXILIARY SOCIETIES.

INTRODUCTORY NOTE.

The publication of Mr. Lyon's "History of Michigan Horticulture" in this volume, renders it necessary to abbreviate many other matters, and in soliciting reports from branch societies, I said that but one page could be given this year to each organization. The reports are consequently quite brief, and because this compilation is made a month earlier than usual, number of societies have not reported in season to be here inserted.

SECRETARY.

OAKLAND COUNTY HORTICULTURAL SOCIETY.

REPORTED BY SECRETARY JAMES S. BRADFORD.

OFFICERS FOR 1887.

President—J. Van Hoosen.*Vice-President*—A. J. Crosby.*Secretary*—James S. Bradford.*Treasurer*—Isaac B. Merritt.*Superintendent of Fruit*—A. E. Green.*Superintendent of Vegetables*—E. W. Jewell.*Superintendent of Flowers*—I. B. Merritt.*Superintendent of Grain*—W. L. Coonley.*Committee to revise premium list*—I. B. Merritt, E. W. Jewell, and A. E. Green.*Committee on meetings and programmes*—H. A. Wyckoff, A. E. Green and A. J. Crosby.

The Oakland County Horticultural Society met in Oxford, Wednesday, Feb. 16, 1887. There was a good attendance, and the papers read unusually interesting.

The attendance was not all that could be desired, but was as large as usual at such meetings. The paper on "Woman as a Fruit Grower," read by Mrs. M. E. Delano, of Thomas, was unusually interesting and full of practical thought; it was very highly commended. Robert Gibbons' practical suggestions to the farmer was pat and well received. Hiram Andrews' paper on "Bohemian Oats," was a very thorough exposé of that contemptible fraud.

The music and other exercises were good.

The annual fair at Pontiac was well attended and was a success in nearly every particular. The exhibition was good considering the dryness of the season. The exhibition of apples, pears, peaches, grapes, flowers and grain was good. The exhibition of vegetables was not as large as last year, owing to the drouth.

The most available source of information to all classes is experience, and they that utilize the lessons learned are the best prepared to meet life's duties. By experience, every studious, discerning farmer is brought face to face with the fact that the times and conditions of the people demand a greater variety of food to meet their wants. The day of bread, pork and potatoes as comprising the larder of the mass of the people, has passed away, except among the needy few. We say needy few because relatively the needy class are in the minority. This change, that all realize, must convince the farmers that it requires diversity to meet the demand and diversity in production to secure profit.

A potent reason for more general crop production is the facilities for transportation, both in rapidity of movement of products and the means afforded for protection from waste by weather contingencies.

Horticulture and pomology have come to be considered as more than side

issues in farming. They have been plants of slow growth, but have blossomed and borne profitable fruit to all faithful workers in these pleasant branches of agriculture.

In the grand march of improvement and diversity Oakland county has exhibited marked progress. The present season shows a large increase in the production of apples, pears and small fruits, and the samples exhibited at the county fair show advancement in the quantity of all classes of fruit. The income from apples alone in this county will approximate, if not exceed, \$200,000.

If it were possible to add to this, other products of the soil of the orchards, it would show an increase exceeding in value on the labor and capital invested, almost any other crop the farmer produces. The large overstock of cereals, with the contingent low prices, has prompted many farmers to devote more care and attention to fruit raising, and they are reaping their reward in better general profits, secured by less labor and expense.

The annual meeting for the election of officers will be Dec. 21, 1887.

LAWTON POMOLOGICAL SOCIETY.

President—Henry Ford.

Secretary—Charles D. Lawton.

This society has to record another serious loss in the death of George W. Lawton, who was an officer and leading spirit in this organization. He was a very enthusiastic horticulturist and a great lover of trees. He was always full to overflowing with indignation at the ruthless destruction of tree life, and his suggestions led to the framing of our present law for planting trees upon our highways. He was a life member of the State Society, and a member of the American Pomological Society. His genial face will be sadly missed in circles of horticulturists in Michigan. His words of suggestion and counsel recorded in the Michigan horticultural reports will now be read again with increased attention now that the author has gone from us.

Secretary Lawton says of the society and horticulture in the vicinity of Lawton:

“So far as this society is concerned I have nothing to report. The fruit culture business has increased. Nearly 1000 tons of grapes were shipped from this station besides a large amount of peaches and other fruits. The quantity of fruit to be set out next spring is greater than ever. The fruit industry is having a good effect in this section in many ways.”

MANISTEE HORTICULTURAL SOCIETY.

REPORTED BY SECRETARY MUKAUTZ.

OFFICERS FOR 1888.

President—Edwin Russell.*Vice-President*—A. V. McAlvay.*Secretary and Treasurer*—Jos. V. P. Mukautz.

The membership is small, and I will forward you names and fees early in December.

Owing to the scattered locations of members and avocations that prevent ever getting more than two or three together at a time, our meetings have been few in number and at long intervals. Besides this, I may state that interest in horticultural matters has hitherto been below zero, as regards the general rural community.

Lumbering interests have been too engrossing to permit of any enthusiasm towards the forwarding of anything else. The foreign element preponderates among our working class, and they cluster mostly around mills and logging centers. These, as well as the great class of farmers, come here with nothing or at most very little, and their first efforts are bent to gaining a foothold. But now that their lots in town are paid for and the little farms outside are beginning to give a return for time, money and labor expended on them, this great class of laboring people, the real blood and sinew of our State, is turning more attention to fruit-growing. Horticultural matters look brighter for the future. I am further encouraged in entertaining this hopeful view from the fact that fruit tree agents in our country are doing well.

This is the case even with two certain firms located in western New York who, within the past four years, have swindled our people badly by palming on them worthless stock. Notwithstanding this fact, however, people will keep on buying from these same firms to their own loss and to the detriment of fruit interests in general.

The past season witnessed another drought in this section of the State, but not such a serious one as we experienced last year.

Fruit is plentiful, however. Apples having ripened prematurely on account of drought, near close of growing season, their keeping qualities are not as good as in other years. While some present a fine appearance, others again show great negligence on the part of the grower in attending to the ravages of the worm.

Peaches and plums were the finest ever seen in this market. The curculio seems to have declared a truce this year, a fact appreciated by all who are lovers of the plum.

The Bear Lake region, in the northwestern part of this (Manistee) county, is our great fruit producing district. Some fine orchards are located there. That is also one of the finest hard-wood sections in the United States, and it will soon be opened up by the Manistee & Northeastern Railroad, which is

pushing its way in that direction. With our extensive tracts of magnificent hard-wood timber, our pine lumber and salt industries already well developed, to which will soon be added our expected oil find, Manistee county looks forward with cheerful heart to a promising future.

With a climate equalized by the waters of Lake Michigan, a protection against untimely frosts afforded by numerous inland lakes and ponds, a soil varying from pure sand to unmixed clay, our county offers to men of enterprise and some capital chances that are of the best.

Our transportation facilities by lake and rail are also good.

Land can be bought on very reasonable terms, at fair prices, and inducements are held out for all who come to remain with us.

The annual reports sent to this branch are placed where it is thought they will do the most good. They are appreciated highly by all who receive them.

THE HILLSDALE AND LENAWEE SOCIETY.

REPORTED BY THE SECRETARY, MRS. MARY N. ALLEN.

OFFICERS FOR 1887.

President—F. G. Church.*Secretary*—Mary N. Allen.*Treasurer*—J. W. Allen.

This society bears the name of the Farmers' Union and Horticultural Society. We have held three meetings this year. One at Rollin Center, one at Church's Corners, Wheatland, and also one at Addison. These meetings were all well attended and much interest and enthusiasm manifested. The discussions and papers that have been brought before the society have covered a wide range of thought, and have been participated in by both gentlemen and ladies. Some of the subjects that have been discussed by the society are these: "What Sheep pay the Farmer Best, Coarse or Fine Woored," led by R. R. Rogers, Medina; "Poultry Raising," by Mrs. E. M. Brown, Addison; "Winter Care of Flowers and Foliage Plants," by Mrs. Mary N. Allen; "Fruit Culture on the Farm," by Frank R. Smith, of Somerset; "Does Ensilage Pay," by J. O. Beal, Rollin; "What should be the Leading Crops of the average Farmer," by Mr. Hart Smith; "Around the House," by Mrs. Mary N. Allen. Our locality is well adapted to horticultural pursuits. All the varieties indigenous to our climate are cultivated successfully, but for the past few years apples have not done as well, owing to climatic influences. There are some fine peach orchards in this vicinity that do well when mercury does not run too low in winter. A peach orchard on Hillsdale farm owned by J. W. Allen contains twelve hundred trees in a thrifty condition.

OSCEOLA HORTICULTURAL SOCIETY.

REPORTED BY SECRETARY STODDARD.

OFFICERS FOR 1887.

President—B. F. Gooch.*Secretary*—W. L. Stoddard.

We have nine members at present. Our summer meeting, held at the farm of Mr. B. F. Gooch in Hersey township, was very poorly attended, although those who were present seemed very much interested. Several were on the program for speeches, papers, etc., but one or two were present. In some way our people mix up the agricultural and horticultural societies and claim that being members of one society make them members of both. Have taken pains to make it generally understood that such is not the case, and our people are commencing to act in favor of the horticultural society.

The horticultural interests of our county are improving finely, but could be made to advance much faster if the people would throw away the idea of relying on their own individual judgment and experience and be willing to accept some of the advice of those men who have made horticulture a study for years, or even meet together and exchange ideas. But I find quite a number still paying fancy prices for fruit trees (genuine Russians, apples, cherries, pears, plums and even grapes) just because the agent's catalogue shows them to be fine, and of Russian stock. The apples that do best with us here are genuine American sorts, such as the Baldwin, Oldenburg, Golden Russet (English), Northern Spy, Fameuse (Canada), Mann, Fall Pippin, Talman Sweet, etc. Cherries are almost a failure. Grapes do very well, Concord and Delaware being in the majority, although the Isabella, Moore's Early, Niagara and other varieties are receiving a trial. Plums and pears do quite well, but do not gain the size they do in the southern part of the State. The same can be said of winter apples. Raspberries and blackberries are in abundance in the woods, and are not much grown in gardens. Almost every kind of strawberries grow in abundance with us, the Wilson and Sharpless taking the lead. Several new kinds are being experimented with.

Our next meeting will be held at Evart, December 13, at which time the experimental work with new fruits will be discussed.

WEXFORD COUNTY HORTICULTURAL SOCIETY.

REPORTED BY SECRETARY LEWIS.

OFFICERS FOR 1887.

President—T. W. Crosby.*Secretary*—Elmer Lewis.*Treasurer*—J. W. Van Ostrand.

This society, although only two years old, has a membership of fifty and has held six meetings during the year; it is fortunate in having free access to the court rooms for its meetings. At the August meeting the society had a very fine exhibit of apples: Yellow Transparent, Red Astrachan, Oldenburg, Tetofsky, Summer Queen and other varieties. The above named varieties all do well here, being hardly enough to stand the winters on low, level land. While on the range of hills forming the divide between the Manistee and Muskegon rivers, any variety that can be raised in southern Michigan does exceedingly well. Small fruits are right at home in this county. For raspberries our growers have found the Ohio, the Shaffer and the Subegan to be the most satisfactory both as to quality and hardiness. For strawberries we prefer the Manchester, fertilized with the Vick, because both being late in putting forth their blossoms they escape the late frosts; and also for the reason that Southern berries are gone at their time of ripening. The Sharpless, Crescent, Wilson and other early varieties do well on rolling land. The berry crop was good this season, and nearly two weeks earlier than last season. Prices ranged from 6c for Wilsons to 10 and 12½ for Manchester, Sharpless, Vick, etc.

Our society has voted the apple tree man out and purchased their nursery stock direct from a reliable grower at a saving of 75 per cent, saying nothing of the pleasure of getting what they order. The society made an exhibit of upwards of 100 plates of fruit at the State fair in September. However it did not do our county justice as an exhibit for the reason that we had not sufficient help on the committee appointed to make the collection; and for the further reason that our local express agent neglected sending it when ordered. Consequently it did not reach Jackson in as good condition as it otherwise would. We propose to do better next time.

The reports of the State Society are eagerly sought for by members and much information obtained. It is a book of no small value to the fruit grower or to the farmer. Our society is composed of both city and country people. Our city people are awake to their interests in beautifying their homes and of aiding the farmers in their vicinity in supporting what all wide awake citizens can see is a great benefit to the county, the Wexford County Horticultural Society.

JACKSON COUNTY

Has no active horticultural society at present, but is coming to the front in the production of celery, onions, berries and grapes. Land in the vicinity of the city of Jackson is being used more for gardens and less for farm crops, though the renting and purchase price is still quite low compared with other cities. Products which a few years ago were shipped in from surrounding sections are now mostly supplied from within the limits of this county notably raspberries and blackberries, celery, cauliflowers, spinach, etc., and the shipment of produce to other markets is fast increasing. The demand for flowers and bedding plants is quite large and is pretty fairly met by our local growers with the ordinary varieties, but there is an excellent opening here for a nursery which will produce the finer ornamental shrubs, roses and exotics. Jackson is a good shipping point for all directions. The country is rolling, sometimes hilly, with frequent intervals of rich mucky soil underlaid with gravel. The upland is mostly either a warm sandy loam, or a heavier gravelly soil and the timber principally oak and hickory. The low land and tamarack swamps, formerly ugly and useless spots on the face of the country, are really our best garden lands, being usually drainable and rich, and are helping to bring our county forward as a gardening region.

R. T. McNAUGHTON.

WAYLAND HORTICULTURAL SOCIETY.

OFFICERS.

President—A. A. Abbott.

First Vice-President—H. B. Nash.

Second Vice-President—Asa Newman.

Secretary—C. E. Davison.

Treasurer—W. L. Heazlit.

The interest in the society meetings the past season has not been well sustained and they have not been as well attended as the individual interest of the members demanded. The organization of the society and the distribution of the State society reports have done a good deal towards creating an interest in fruit growing in this vicinity. Orchards are receiving more attention and quite a number of farmers are adding a few choice varieties of grapes to the neglected and abused Concord of the past, and still others are putting out some of the newer varieties of strawberries and black caps. Those having favorable locations are talking "peach" strongly and already about 8,000 trees have been set, nearly half of which gave a fair yield the past season, the most profitable varieties being Alexander and Hill's Chili. About a thousand bushels were shipped from this township this season. There are but two vineyards in bearing condition, one four years old, the other ten years old or more. The yield of Dr. Byrd's was 1,500 pounds, that of Mr. Newman about 5,000 pounds. The dry season was very favorable to the grape, but berries and other small fruits were nearly a total failure. The apple crop was full average in quantity but very wormy. Unless spraying the trees with London purple or Paris green is resorted to the codling moth will eventually consign all our apples to the evaporator man.

EATON COUNTY HORTICULTURAL SOCIETY.

REPORTED BY SECRETARY FULLER.

OFFICERS FOR 1887.

President—H. D. Griffith, Otter Creek. .*Secretary*—S. R. Fuller, Eaton Rapids.

The Eaton County Horticultural Society has convened eight times during 1887. We are more successful since adopting the plan of meeting at the homes of the members. Our plan is to convene as soon after 10 o'clock A. M. as possible, and a dinner is provided by our ladies and served as most convenient.

Topics for discussion are announced at each meeting for the meeting of the next month. We have had the following topics: "The Apple and Its Enemies," in which Professor Bailey of Agricultural College aided us; later "The Raspberry and Blackberry;" again, "Small Fruits for Profit," and at the October meeting the subject of "Horticulture and Highways and Reforestation" was discussed, and we were aided by Secretary Charles W. Garfield.

The topic for our November meeting is "Renovating Old Orchards," and also "Some of the Lessons of our Fairs." Our society has a membership of only 27, yet at our gatherings on the social plan it is not difficult to get at each meeting 60 or 80 persons, but the paid membership is small.

I have not yet been able to devise any plan to satisfactorily increase the membership.

At our meeting at this date, November 16th, we are favored by the assistance of Prof. L. H. Bailey. His experience in the renovation of old orchards; explaining the work on the college orchard and its results; also work of horticulture compared with agriculture of to-day; and the need of legislative aid for horticultural work; the growth of our small fruits, with their improvements in the past 25 years, greatly interested our people.

BENZIE COUNTY HORTICULTURAL SOCIETY.

REPORTED BY SECRETARY VAN DEMAN.

OFFICERS FOR 1887.

President—J. J. Hubbell, Benzonia.*Secretary*—J. W. Van Deman, Benzonia.*Treasurer*—A. G. Butler, Frankfort.

This society held an enthusiastic meeting on the evening of January 19th, in the hall of Pleasanton Grange, whose members afforded a fine exhibit of fruit and spread a sumptuous repast, which was greatly enjoyed, especially by those who had come through the cold in sleighs from Benzonia.

The fruit was examined critically by the judges appointed, and premiums awarded. Many choice specimens were sent to H. E. Van Deman, chief of the division of pomology in Department of Agriculture at Washington, D. C.

These were acknowledged by him and unknown varieties named. Some of them were pronounced the finest specimens ever exhibited.

On the evening of Sept. 14th a meeting was held in township of Platte. A box of choice specimens was made up for the State fair. A meeting was held in Frankfort on the evening of Sept. 16th, where there was a large display of fruit which was forwarded the next morning to the State fair.

There was not help enough or time enough that night to wrap all the specimens separately and pack as should have been done, and some had to be sent in a large box to complete the exhibit of 116 plates which we made there. The annual meeting has not yet been held and list of members not completed.

SAUGATUCK AND GANGES POMOLOGICAL SOCIETY.

REPORTED BY J. F. TAYLOR, PRESIDENT.

OFFICERS FOR 1888.

President—J. F. Taylor, Douglas.*Vice Presidents*—D. W. Wiley, Douglas; D. Falconer, Saugatuck; D. H. Kitchen, Peach Belt; G. H. Waldo, Douglas; H. Schumacher, Saugatuck; L. Kingsley, Saugatuck.*Secretary*—J. S. Owen, Douglas.*Treasurer*—H. Bird, jr., Douglas.

The Saugatuck and Ganges Pomological Society has been breathing spasmodically during the past year. Our meetings have not been numerous, but the members are as full of pomological zeal as at any former time in the history of the society. The inspiration of our work is always calling for more labor and demanding greater outlays of time and money in home adornments. We can always see more to be done than we can find time or strength to do. Every man who contemplates gaining a livelihood from the results of fruit growing needs a good sized purse with which to begin operations. Fruit trees do not, like grains, give results the first year after planting. Quick returns are not often realized. Hopes deferred have made many hearts sick in times past, but there is a "bow in the clouds." The past three years have produced marked changes in western Allegan county. In former years the foundations of fruit growing were laid by cutting off the timber and subduing the virgin soil. Now improvement is the order of the day. Draining and clearing out swamps and catholes are prominent features of our work. Our members have an eye on these things and forget the monthly meetings. In other words they are great workers and slow talkers. They delight more in demonstrating their ideas of pomology on land than on paper.

But every tiller of the soil knows that these demonstrations require much time to secure complete results. The past season has been one of unusual anxiety among fruit growers in this region. Every changing moon has been looked for with great solicitude to see if it prognosticated more of drouth or moisture for the future. No one could anticipate the effect of such hot, dry weather on the growing fruit. In many localities the leaves drooped as if all vitality was departing, and in some places the peaches shriveled on the trees, as if already dead. The basket factories shut down—thinking their wares would not be called for—but a change came. "The latter rains" watered the earth. Small fruits, except strawberries, were really worthless. Apples, peaches and pears nearly recovered from all the effects of drouth. Perhaps some varieties more than made up in flavor and color what they lacked in size in comparison with former years. The quality of all fruits has been excellent. But the results of this dry summer can not be fully known until another autumn. One year runs into another in very many respects, but in nothing more than in the preparation which one gives for another's fruitfulness. We all look forward to the coming summer with a

good deal of anxiety in regard to the outcome of this severe drouth. The following townships: Laketown, Clyde, Manlius, Saugatuck and Ganges, have sent off this year, 1,212,516 baskets of peaches, about 35,000 barrels of apples, 10,000 cases of berries and 450 boxes of evaporated fruit. With the trees now growing this amount will be duplicated in three or four years.

In view of these facts we want larger facilities for shipping and more extended markets. The peachless world is not too large for our surplus fruit, if only we can have access to it.

WASHTENAW COUNTY POMOLOGICAL SOCIETY.

REPORTED BY SECRETARY GANZHORN.

OFFICERS FOR THE YEAR 1887.

President—J. Austin Scott.*Vice-Presidents*—J. D. Baldwin, J. J. Parshall and Wm. McCreery.*Secretary*—Jacob Ganzhorn.*Corresponding Secretary*—E. Baur.*Treasurer*—John Almand.*Executive Committee*—E. H. Scott, J. H. Clough, C. E. Wiard, W. F. Bird.*Botanist*—Prof. Volney F. Spalding.*Climatologist*—Prof. Mark W. Harrington.*Hygienist*—Prof. A. B. Prescott.*Entomologist and Ornithologist*—Prof. J. B. Steere.

The society keeps up its regular monthly meetings which are usually well attended. Aside from a large variety of local matters incident to the growing of all the fruits cultivated here that were discussed, our time has been mainly occupied during the season with the creation of a fruit factory, towards which the society raised a bonus of \$1,000 to the firm who established the business, the firm spending over \$5,000 in its erection. The factory evaporates all the fruits in their season; has fixtures for manufacturing jelly, and peach and apple butter. About 20 hands have been employed in the establishment during the working season.

A good deal of work was done in the direction of transportation. The shipping of fruits from Ann Arbor has grown beyond the scope of the Express Company to carry. Arrangements were made with the Michigan Central Railroad Company to carry peaches to Detroit by freight. A car was loaded every day during the peach season. Smaller shipments were made also by freight going in cars with merchandise. The fruit men have made a saving amounting to several hundreds of dollars in freight during the short period since breaking away from the Express Company. We expect to carry our berries also by freight next season.

The small fruit crops were good, though cut short some by the protracted drouth; the prices, however, were fair and satisfactory. Our red raspberries, strawberries and blackcap raspberries were sold at but a little over cost. The apple crop was good, but the season proved too warm for this fruit to keep well. The peach crop was large, and fine in quality and size. The late peaches carried exceedingly well by freight in long distances. The Smock was known to keep three weeks in excellent condition. The president and secretary advocate the planting of late peaches largely for this section. The weather being cool at the time these late peaches ripen they carry well by freight and long distances, and this at a time when prices rule higher. The dry and warm season was favorable for the grape, and immense crops, of

good quality, resulted. There was some rot among grapes, but not enough to materially reduce the crop. The Brighton has proved the best early grape this season and the Jefferson excellent for a late keeper. Grapes (Concord) in large supply, were in the Ann Arbor market till November. Plums did well, even the foreign sorts bore finely and were good quality and handsome. Cherries bore but a trifle. Quinces, generally, did well.

GRAND RIVER VALLEY HORTICULTURAL SOCIETY.

REPORTED BY SECRETARY COOK.

OFFICERS FOR 1888.

President—C. W. Garfield.*Vice President*—J. A. Pearce.*Secretary*—W. N. Cook.*Treasurer*—E. C. Phillips.*Executive Board*—R. D. Graham, E. M. Ball, S. S. Bailey, Thomas Wilde.

In accordance with the requirements of the by-laws of the Grand River Valley Horticultural Society the secretary submits this his annual report.

In the month of January a meeting of the executive board of this society was held at the home of its president, Chas. W. Garfield, at which meeting was prepared a plan of the operations of the society for the ensuing year. A new departure from the usual course of holding meetings in a hall in the city was decided upon, viz., the holding of such meetings at the residences of its members. The advantages of this plan, it was thought, would be twofold: First, giving the members the opportunity to see the method adopted by each in his specialty, and, seeing the result, compare methods and thus reach practical conclusions. Second, by making each meeting a picnic affair, hoping to interest the ladies in our work, and so advance the social interests of the society. To this end a series of meetings, one for each month, was arranged and has been carried out without a failure. The action of the executive board was approved at the February meeting.

These meetings opened with one held at the residence of Mrs. Sarah Smith, in the township of Walker, on April 5th, which was the "Floral" gathering. The interest centered in the greenhouses, which were greatly admired by sixty members in attendance. This was followed by one held at Burton farm, Paris, the home of our president, May 3d, where "Economic Fruit Growing" was the leading topic. June 10th found a large number collected at the beautiful home of S. S. Bailey, in East Paris, where strawberries, large, red and by the acre greeted the eye and courted the appetite, and there was no stint of strawberries and Jersey cream and good cheer. July 5th found the society assembled at the hospitable home of our esteemed brother, W. K. Emmons, in Wyoming. This being the "Raspberry" meeting that luscious fruit, in all shades of color, was found growing in profusion, and all left for their respective homes feeling that the day had been profitably and agreeably spent.

The "Peach" meeting was held on July 29th, at Joseph A. Pearce's place, in Grand Rapids township, on one of the hottest days of the season, notwithstanding which about one hundred were present. The meeting and picnic were held in a pleasant grove. There was a very fine display of the Alexander, Beatrice and Louise peaches; also, Tetofski and Red Astrachan apples and others of the Russian sorts.

The grape meeting was held at H. H. Hayes's home in Talmadge, Ottawa county, and on the only rainy day that occurred at any of the series of meet-

ings. About fifty were present and were amply repaid for the courage displayed in braving the storm in the magnificent sight which awaited them, his Niagara vineyard being literally loaded with clusters of that delightful fruit, averaging almost one pound each, showing careful thought and thorough culture.

October 4th called the society to R. D. Graham's to discuss the late fruits, where the Smock peach was shown in fine condition; also late varieties of fall and winter apples in profusion. November 3d brings us down to the close of the season, with the apple as a topic. E. Chase Phillips and his amiable wife greeted the several members as they arrived at their romantic home in Walker. This meeting was a fitting finale to the course. The interest never flagged, but was on the increase to the end. Mr. S. L. Fuller, Secretary of the Farmers' Club, in a card to the Secretary, congratulated the society on its success in what he chose to call our "Swinging around the circle."

There has been forty-five memberships the past year, consisting of new members and renewals of old ones.

The society made a creditable exhibit of over one hundred plates of fruit at the State fair at Jackson.

INGHAM COUNTY HORTICULTURAL SOCIETY.

REPORT OF SECRETARY STEBBINS.

OFFICERS FOR 1888.

President—Prof. L. H. Bailey.

Vice-President—Mrs. S. R. Leete.

Secretary—Prof. James Satterlee.

Treasurer—R. H. Holmes.

The Ingham County Horticultural Society was organized in March, 1880, with thirty-eight members. It has continued to exist with pretty uniform interest, with an average membership of twenty-four. The past year it was twenty-two. Eight meetings were held during the year. In June a floral exhibition was held, with prizes for the finest display of wild and cultivated flowers. The meeting was held at the City Hall, and was largely attended. The children were especially interested, and manifested much taste and industry in their collections. The regular meetings are held in the State Pioneers' hall in the fourth story of the Capitol, reached by an elevator.

It is an unfortunate circumstance that in the summer and autumn months the fruit growers, upon whom we most rely to keep up the interest in the monthly meetings, are so busy that it is difficult for them to attend. This induced us in June to adjourn till October.

At the State fair the society furnished the fruits necessary to entitle it to a remission of its dues to the State society. Apples in this county seem more and more infected with worms from year to year. A few years since, only trees in the city were much infected, but the country is now getting its share. The farmers, to a large extent, sell their sound apples for shipment, and we poor city folks have to take up with the wormy culls.

During the year our society has lost one of its most valued members by death, Mrs. D. L. Case. Mrs. Case has been an active worker in the society from its organization, and for three years past vice-president. She was a lady of rare worth, social and moral, and her loss is universally mourned.

WAYNE COUNTY HORTICULTURAL SOCIETY.

REPORTED BY SECRETARY ROOT.

The annual meeting was held December 18, 1886, and the officers for 1887 were elected as follows :

President—N. T. Bradner, Sand Hill.

Vice President—Henry Hurd, Plymouth.

Secretary—J. F. Root, Plymouth.

Treasurer—Lafayette Dean, Plymouth.

Several meetings have been held during the year, but not as many as we would hope for in the year to come. Most of the meetings have been well attended and we think we are safe in saying, all who attended them have been well pleased. We have had many excellent papers during the year, and still more questions on practical subjects discussed. Much credit is due President Bradner, who has done so much to make our meetings what they have been. An excellent program has been arranged by him every time. We have several fine papers which we had expected to have in this report if space had permitted. All our meetings have been held at Plymouth, which we think is not quite right. If some of the meetings could be in other towns we think it would tend to increase our membership.

OCEANA COUNTY HORTICULTURAL SOCIETY.

SHELBY, Mich., Nov. 12, 1887.

Chas. W. Garfield, Secretary Michigan Horticultural Society:

I herewith submit a report of Oceana County Horticultural Society for the year 1887. The annual meeting for the election of officers for the ensuing year was held at Shelby, Dec. 18, 1886. The following are the names of officers elected:

President—A. Adams, Shelby.*Vice President*—Benton Gebhart, Mears.*Secretary*—T. S. Braman, Shelby.*Treasurer*—A. E. Souther, Shelby.*Board of Directors*—Rhodes Willetts, Shelby; Thos. Sebring, Shelby; Benton Gebhart, Mears; W. E. Ambler, Pentwater; Benj. S. Garver, Hart.

A mass meeting of the county fruit growers was held at Shelby, Feb. 2d and 3d. Papers were read upon the following subjects:

"Oceana County for Fruit, Adaptability of Soil and Climate," C. A. Sessions; "Small Fruit Growing," J. M. Haight; "The Plum, Best Varieties for Cultivation and its Insect Enemies," Benton S. Gebhart; "Growing and Marketing the Potato," O. K. White; "Planting and Growing a Peach Orchard," C. A. Hawley; "Floriculture," Miss Ida Woodward; "The Apple, Cultivation, Marketing and Best Varieties," D. L. Garver; "Best Market Varieties of Peaches," N. Adams; "Profits of Sheep Husbandry," D. C. Oakes; "The Farmer, Past and Present," L. B. Mitchell; "The Best Fertilizer for the Peach Orchard," Thos. Sebring; "The Profits of Bee Keeping," W. H. Barry; "The Relative Profits of the Farmer and Merchant," Jas. Watts.

Six regular meetings have been held during the year. The society at present numbers but about fourteen members: A. Adams, C. A. Hawley, C. A. Sessions, N. B. Farnsworth, T. S. Braman, E. Stanhope, Benton Gebhart, Benj. Garver, Aaron Gebhart, D. L. Garver, Jas. Watts, A. E. Souther, Thos. Sebring, W. E. Ambler. Mr. Sessions took our exhibit of fruit to State fair from this county.

There has been a large crop of fruit harvested the present season. I had expected to get a full report of number of bushels of apples, peaches and plums raised and sold in this county, but have not secured it as yet. It is safe to say that a larger crop of the three named fruits has been produced than in any previous season.

SOUTH HAVEN AND CASCO POMOLOGICAL SOCIETY.

REPORTED BY SECRETARY GULLEY.

OFFICERS FOR 1888.

President—C. J. Monroe.*Vice President*—A. H. Cook.*Secretary*—W. H. Payne.*Treasurer*—R. W. Linderman.*Executive Committee*—D. E. Histed, H. G. Linderman, G. Lannin.

The year 1887 has been one of comparative quiet for this society. Nothing particularly new in insects or diseases has appeared to attract the attention of the members, and the yellows has been so thoroughly overcome by the past efforts of the society that the disease has hardly been heard of the past year. It has been so fully proved that the course pursued by the society in advocating a thorough eradication of diseased trees, as the only way to compete with it, that not a grower can now be found in the vicinity that would take any other course.

The very large crop of nearly all varieties of fruit the past year has also so fully occupied the time of the growers that but little was left for society or other work. Yet the past experience of the society has been, that when any matter came up requiring its especial attention, full meetings could be depended upon. The meetings the coming winter will prove this to be the case. The very dry season which has just past has brought up new questions of irrigation, cultivation in drouths, more thorough thinning of fruits in such seasons and other topics in connection with them, that the society has new fields of discussion which have not been particularly brought out.

Of the many new varieties of fruit sent out each year, no more can be added to the list published in the last report, as being specially desirable for profit. Perhaps the order of the lists might be changed somewhat, for different seasons change the yield and profit of the varieties, and growers are liable to remember the success of the more recent years rather than of those that have past. But the general list would not be changed.

The result of the past work of the society is well shown in the uniform manner in which the work of the growers in the vicinity is carried on. When any mode of cultivation or pruning is found to produce the best results, through the society it is made known to the growers and soon adopted by all, so that a general similarity of work is found through the whole community.

Such have been the results of the work of the society in the past. And as good results may be expected of its future existence.

THE ALLEGAN COUNTY POMOLOGICAL SOCIETY.

REPORTED BY SECRETARY LAFLEUR.

OFFICERS FOR 1887.

President—Wm. Peet.*Vice President*—Charles Manwarring.*Treasurer*—Allen Wood.*Secretary*—G. H. La Fleur.

The society has held regular meetings on the fourth Tuesday of each month. We meet at farm houses or some grange hall in different towns. The forenoon is spent in a social manner, when a picnic dinner is served. After this the meeting is called to order. The secretary prepares the programme for each meeting. A notice of each meeting is published in all the Allegan papers, with the programme. We take up some subject, dividing it into several parts. Some member who has been assigned some one point and given time to prepare himself is called upon to lead off with a short talk, confining himself strictly to that part of the main question which had been assigned to him. He is followed by others upon the same point. In this manner we take up each part separately into which the main question is divided. This is followed by general talk upon the same subject or some other which may be introduced. During the year we have discussed almost every kind of fruit and berries, from the growing of the trees or plants to selling the fruit in the market. Every member is expected to take part in the discussion. The ladies are generally in attendance and sometimes read essays and take part in the questions discussed.

We do not confine ourselves to questions strictly relating to horticulture, but sometimes talk upon questions that interest farmers and their wives. We generally have on exhibition at the meetings the products of the garden or orchard. This is for the purpose of comparing varieties of fruit and correcting names; these specimens are commented upon and all are permitted to examine them; this renders our meetings educational as well as pleasant. The attendance has been good during the year, with increasing interest on the part of members and a better appreciation of the work of the society by the public in general. We have discarded long essays and now have short, practical talks from each member. The Allegan Gazette publishes a full report of our meeting. The secretary keeps these published reports on file for reference.

MUSKEGON COUNTY HORTICULTURAL SOCIETY.

BY C. L. WHITNEY, SECRETARY.

On the 28th day of May, 1887, the Muskegon County Horticultural Society was duly reorganized and incorporated under articles of association as provided by the statutes of the State.

OFFICERS FOR 1887.

President—Henry H. Holt.

Vice President—F. F. Bowles.

Secretary—C. L. Whitney.

Treasurer—Osman Baxter.

Executive Committee—President, Secretary, Treasurer, Geo. F. Ashton and Wm. M. Collier.

The time of holding the monthly meetings was changed to the last Saturday of each month, the annual meeting being the last Saturday of the year, on December 31st this year, and it was also arranged that the meetings for June, July, August and September should be held outside the city, at the homes of the members. The meeting for July was at Capt. E. F. Giles's, when George N. Williams read a valuable paper upon "The Cultivation of Onions," which was discussed at length.

The meeting for August was at the home of Wm. M. Collier, whose vineyard and blackberry field showed to good advantage, instructing all who saw it. George F. Ashton read an interesting and instructive paper at this meeting, on "The Cultivation of Fruit for Profit."

HORTICULTURAL EXHIBITS.

While fruits, flowers and vegetables, in their season, have been shown at all the monthly meetings, two special exhibitions have been held.

The Strawberry and Flower Show of June 18th brought out some fine strawberries and beautiful flowers, and was a success. All premiums earned were duly paid.

THE HORTICULTURAL FAIR,

held September 16th and 17th, would have done honor to any State and district fair held in the State.

The exhibits filled two large halls and attracted much attention from our citizens, and should have been continued another day if the halls could have been had.

The fruit and flowers occupied one hall, the vegetables and grains another, while the pastry and dairy show found place in a large ante-room.

The apples and grapes were especially fine, as were the vegetables, especially those of melon and squash kind. This fair was also a financial success.

The receipts were about one hundred dollars ; expenses and premiums ninety dollars, leaving a balance in the treasury on account of the fair alone. None but members were allowed to exhibit, which makes it an object to become a member of the society.

LENAWEE COUNTY HORTICULTURAL SOCIETY.

REPORTED BY SECRETARY EDMISTON.

OFFICERS FOR THE YEAR 1887.

President—N. J. Strong.
Vice President—B. I. Loring.
Secretary—D. G. Edmiston.
Treasurer—E. W. Allis.
Librarian—Dr. W. Owen.

The society has held regular monthly meetings during the year, all of which have been well attended and several of which have been largely attended.

We have uniformly held a forenoon and afternoon session, with a public dinner at noon, spread by the ladies of the society for all members and visiting friends.

In February a two days' meeting was held, at which topics of general interest to fruit growers, gardeners, etc., were discussed by prominent speakers and writers.

The society held an exhibition of strawberries and flowers in June in the city hall, at which about 35 varieties of strawberries were exhibited and the fine appearance and good quality of the display showed a marked improvement in the methods of culture, handling, etc., over the olden times.

Seasonable fruits have been on the table at all meetings of the year, and many of the new and rare varieties have been exhibited from time to time.

The interest in the discussions of the society is gradually increasing and the society is being recognized as one of the established institutions of the county, yet we recognize the fact that the field is large and the laborers are few, while the masses are merely looking on, hoping in many cases to reap the reward without performing the labor.

LIST OF ANNUAL MEMBERS.

LIST OF ANNUAL MEMBERS FOR 1887.*

NAME.	P. O. ADDRESS.	COUNTY.
Abbott, A. A.	Wayland	Allegan.
Aller, Geo.	Wayland	Allegan.
Atwood, A.	Eaton Rapids	Eaton.
Atwood, Mrs. R. E.	Eaton Rapids	Eaton.
Antisdale, S. G.	Benton Harbor	Berrien.
Alysworth, John	Benton Harbor	Berrien.
Aspell, James	Benton Harbor	Berrien.
Anderson, S. B.	Benton Harbor	Berrien.
Arnold, Mrs. Evelyn	Grand Rapids	Kent.
Agard, L. B.	Litchfield	Hillsdale.
Allis, E. P.	Adrian	Lenawee.
Ball, E. M.	Grand Rapids	Kent.
Ball, F. W.	Grand Rapids	Kent.
Ballard, Hiram	Lansing	Ingham.
Ballard, C. L.	Cadillac	Wexford.
Bailey, Prof. L. H.	Lansing	Ingham.
Bailey, S. S.	East Paris	Kent.
Blowers, H. S.	Wayland	Allegan.
Boorn, S. S.	Eaton Rapids	Eaton.
Best, J.	Grand Rapids	Kent.
Bates, M. W.	Grand Rapids	Kent.
Bush, O. T.	Ganges	Allegan.
Bosworth, E. F.	Grand Rapids	Kent.
Blue, Geo.	Cadillac	Wexford.
Bishop, J. K.	Benton Harbor	Berrien.
Bellows, Ben. F.	Eaton Rapids	Eaton.
Bradish, A. W.	Adrian	Lenawee.
Bradish, Chas. H.	Adrian	Lenawee.
Bradish, H. C.	Adrian	Lenawee.
Buskirk, A. L.	Wayland	Allegan.
Buskirk, H. F.	Wayland	Allegan.
Buskirk, Thos.	Wayland	Allegan.
Brown, Thos. L.	Grandville	Kent.
Beal, Prof. W. J.	Lansing	Ingham.
Bartlett, Mrs. H. P.	Lansing	Ingham.
Boynton, D.	Benton Harbor	Berrien.
Betts, C. M.	Hillsdale	Hillsdale.
Bennett, G. G.	Grand Rapids	Kent.
Bos, A.	Forest Grove	Ottawa.
Blanchard, J. M.	Adrian	Lenawee.
Brewer, F. B.	Ottawa Station	Ottawa.
Babcock, E. F.	Russellville	Arkansas.
Bradner, N. T.	Plymouth	Wayne.
Baird, David	Manalapan	New Jersey.
Boardman, S. R.	North Manitou	Manitou.
Baumgrass, Jacob	Lansing	Ingham.

*The list is unfortunately incomplete, as at the time of its compilation a number of Societies have not reported their membership.—SEC'Y.

NAME.	P. O. ADDRESS.	COUNTY.
Baars, Mrs. J. F.	Grand Rapids.	Kent.
Brayman, H. O.	Grand Rapids.	Kent.
Bird, Henry, Jr.	Douglas.	Allegan.
Baleom, C.	Grand Rapids.	Kent.
Barber, D. L.	Saugatuck.	Allegan.
Clement, Walter.	Adrian.	Lenawee.
Coller, Peter.	Adrian.	Lenawee.
Crane, Calvin.	Adrian.	Lenawee.
Crosby, T. W.	Cadillac.	Wexford.
Collier, M.	Springport.	Eaton.
Cheney, A. B.	Sparta.	Kent.
Coon, Dennis.	Grand Rapids.	Kent.
Chapman, J. B.	Grand Rapids.	Kent.
Chamberlain, Jno.	Wayland.	Allegan.
Cain, Joseph M.	Cadillac.	Wexford.
Comings, G. F.	St. Joseph.	Berrien.
Corner, Wm.	Ganges.	Allegan.
Carman, R. A.	Flint.	Genesee.
Chapin, C. T.	Cadillac.	Wexford.
Coffinbury, W. L.	Grand Rapids.	Kent.
Coffinbury, A. B.	Grand Rapids.	Kent.
Cook, W. N.	Grand Rapids.	Kent.
Cook, S.	Benton Harbor.	Berrien.
Chase Bros.	Rochester.	New York.
Chase, Wm.	Wayland.	Allegan.
Coryell, R. J.	Jonesville.	Hillsdale.
Coryell, C. R.	Jonesville.	Hillsdale.
Case, Mrs. D. L.	Lansing.	Ingham.
Clark, Enos.	Cadillac.	Wexford.
Clark, E. F.	Wayland.	Allegan.
Cummer, Jacob.	Cadillac.	Wexford.
Cummer, Geo. A.	Cadillac.	Wexford.
Cummer, R. J.	Cadillac.	Wexford.
Crawford, Allyn.	Springport.	Eaton.
Crawford, M.	Cuyahoga Falls.	Ohio.
Calkins, W. E.	Grand Rapids.	Kent.
Calkins, Daniel.	Flushing.	Genesee.
Calkins, Edmund.	Swartz Creek.	Genesee.
Duryea, Fred.	Cadillac.	Wexford.
Dodge, E. M.	Lowell.	Kent.
Dunn, Wm.	Ganges.	Allegan.
Dorland, W. A.	Grand Rapids.	Kent.
Dewey, D. M.	Rochester.	New York.
Diggins, D. F.	Cadillac.	Wexford.
Davis, Eugene.	Grand Rapids.	Kent.
Dole, W. H.	Boston.	Mass.
Dresser, H. H.	Hillsdale.	Hillsdale.
Dilenbeck, G. A.	Cadillac.	Wexford.
Davison, C. E.	Wayland.	Allegan.
Davis, J. W.	Adrian.	Lenawee.
Dean, Mrs. E. A.	Plymouth.	Wayne.
Dean, S.	Plymouth.	Wayne.
Drake, H. E.	Flint.	Genesee.
Emmons, W. K.	Byron Center.	Kent.
Emmert, Mrs. Wm. M.	Eaton Rapids.	Eaton.
Emmert, Wm.	Eaton Rapids.	Eaton.
Etchenaw, J.	Wayland.	Allegan.
Eldridge, Abram.	Flint.	Genesee.
Eldridge, John.	Flint.	Genesee.
Evans, C. L.	Eaton Rapids.	Eaton.
Eldred, N. J.	Benton Harbor.	Berrien.
Elderkin, John.	Flint.	Genesee.

NAME.	P. O. ADDRESS.	COUNTY.
Ellis, J.	Lansing	Ingham.
Edmiston, D. G.	Adrian	Lenawee.
Ferris, Wesley	Eaton Rapids	Eaton.
Fuller, S. L.	Grand Rapids	Kent.
Fuller, A. G.	Cadillac	Wexford.
Fuller, S. R.	Eaton Rapids	Eaton.
Fox, P. V.	Grand Rapids	Kent.
French, Geo. A.	Flushing	Genesee.
Field, Henry L.	Eaton Rapids	Eaton.
Farr, Bethel	Cadillac	Wexford.
Ford, Nill. D.	Cadillac	Wexford.
Falconer, D.	Saugatuck	Allegan.
Fitzsimmons, J. F.	Hillsdale	Hillsdale.
Foxworthy, H. C.	Cadillac	Wexford.
Felt, A. M.	Flint	Genesee.
Farnum, C. H.	Benton Harbor	Berrien.
Green, Wm. P.	Eaton Rapids	Eaton.
Green, Arthur	Eaton Rapids	Eaton.
Garfield, Chas. W.	Grand Rapids	Kent.
Griffith, Geo. T.	Otter Creek	Eaton.
Griffith, H. D.	Otter Creek	Eaton.
Graham, H. E.	Douglas	Allegan.
Graham, E.	Grand Rapids	Kent.
Graham, Thomas	Grand Rapids	Kent.
Graham, John	Grand Rapids	Kent.
Graham, R. D.	Grand Rapids	Kent.
Graham, Geo. S.	Cadillac	Wexford.
Gibson, D. R.	Clinton	Lenawee.
Gibson, W. K.	Jackson	Jackson.
Gladden, Wm.	Lansing	Ingham.
Gladden, Mrs. Wm.	Lansing	Ingham.
Gander, Peter W.	Adrian	Lenawee.
Gander, Alfred M.	Adrian	Lenawee.
Gilbert, Thos. D.	Grand Rapids	Kent.
Grondyke, Sam'l	Eugene	Indiana.
Gardiner, James	Ganges	Allegan.
Gerber, D.	Douglas	Allegan.
Gow, Wm. M.	Cadillac	Wexford.
George, W. L.	Benton Harbor	Berrien.
Gerrish, W. L.	Cadillac	Wexford.
Harrison, W. H.	Grand Rapids	Kent.
Herring, William A.	Hillsdale	Hillsdale.
House, H. L.	Saugatuck	Allegan.
Hinman, D. W.	Peach Belt	Allegan.
Holmes, E. S.	Grand Rapids	Kent.
Holmes, R. H.	Lansing	Ingham.
Hawkins, John	Cadillac	Wexford.
Hanford, J. H.	Plymouth	Wayne.
Holden, D. M.	Weston	Lenawee.
Haskin, E. E.	Cadillac	Wexford.
Hurd, Henry	Plymouth	Wayne.
Hanse, N. E.	Ames	Iowa.
Haynes, A. E.	Hillsdale	Hillsdale.
Hewitt, Alexander	Hillsdale	Hillsdale.
Holloway F. M.	Hillsdale	Hillsdale.
Hogue, J. R.	Cadillac	Wexford.
Handy, S.	Benton Harbor	Berrien.
Henzlet, W. L.	Wayland	Allegan.
Howell, Jared A.	Adrian	Lenawee.
Hosford, Geo.	Ionia	Ionia.
Hough, F. J.	Adrian	Lenawee.
Huntly, F. H.	Cadillac	Wexford.

NAME.	P. O. ADDRESS.	COUNTY.
Helme, J. W.	Adrian	Lenawee.
Hovey, J. A.	Grand Rapids	Kent.
Hestor, Fred.	Cadillac	Wexford.
Hogadone, H. C.	Grand Rapids	Kent.
Harger, Ezra	Cadillac	Wexford.
Hayes, H. H.	Talmadge	Ottawa.
Hamilton, A.	Peach Belt	Allegan.
Hamilton, Samuel M.	Adrian	Lenawee.
Jewett, E. B.	Benton Harbor	Berrien.
Johnston, Perley W.	Grand Rapids	Kent.
James, A.	Benton Harbor	Berrien.
Jenks, Mrs. A.	Lansing	Ingham.
Kies, J. S.	Clinton	Lenawee.
Kies, Geo. D.	Clinton	Lenawee.
Kane, Newton	Hillsdale	Hillsdale.
Kane, W. L.	St. Joseph	Berrien.
Kimse, Mrs. A. B.	Lansing	Ingham.
Knickerbocker, Walter	Flint	Genesee.
Knight, Abram	Swartz Creek	Genesee.
Knapp, Chas. E.	Grand Rapids	Kent.
Keiffer, S. E.	Grand Rapids	Kent.
Kotvis, John	Grand Rapids	Kent.
Kysor, D. S.	Cadillac	Wexford.
Kinyon, J. E.	Plymouth	Wayne.
Keildsen, Fred. S.	Cadillac	Wexford.
Knudson, Geo.	Cadillac	Wexford.
Kitchen, D. H.	Peach Belt	Allegan.
Kingsley, L.	Saugatuck	Allegan.
Kelly, F. B.	Cadillac	Wexford.
Kibby, J. H.	Douglas	Allegan.
Leaman, Jud.	Cadillac	Wexford.
Lake, Oliver B.	Eaton Rapids	Eaton.
Leete, Mrs. S. R.	Lansing	Ingham.
Leeland, B. F.	Flint	Genesee.
Leavenworth, F. H.	Detroit	Wayne.
Ladd, Ira	Adrian	Lenawee.
LeClair, A.	Cadillac	Wexford.
Long, Elias A.	Buffalo	New York.
Law, L. J.	Cadillac	Wexford.
LaBar, Chas. H.	Cadillac	Wexford.
Lochner, Lewis T.	Adrian	Lenawee.
Lamb, F. J.	Grand Rapids	Kent.
Lawrence, C. D.	Grand Rapids	Kent.
Laing, B. I.	Lenawee Junction	Lenawee.
Lentz, F. C.	Cadillac	Wexford.
Linderman, G. S.	Grand Rapids	Kent.
Lewis, Elmer	Cadillac	Wexford.
Lewis, S. R.	Ganges	Allegan.
Moore, Nelson	Lansing	Ingham.
Moore, Mrs. Nelson	Lansing	Ingham.
McIntyre, D. E.	Cadillac	Wexford.
McIntyre, Jno.	Wayland	Allegan.
McClave, A. J.	Benton Harbor	Berrien.
Moshier, G. A.	Wayland	Allegan.
Mills, A. S.	Clinton	Lenawee.
Millbourn, Miss Etta	Eaton Rapids	Eaton.
Meatheany, E. L.	Cadillac	Wexford.
Manley, Edmund	Grand Rapids	Kent.
Marshall, Dr. O.	Lansing	Ingham.
Markham, Mrs. Mary	Plymouth	Wayne.
Munson, W. K.	Grand Rapids	Kent.
Monroe, C. J.	South Haven	Van Buren.

NAME.	P. O. ADDRESS.	COUNTY.
Monroe, O. C.	Hillsdale	Hillsdale.
Merry, A. J.	Benton Harbor	Berrien.
Nichols, Isaac	Cadillac	Wexford.
Nash, H. B.	Wayland	Allegan.
Norris, R. C.	Cadillac	Wexford.
Newman, Asa	Wayland	Allegan.
Onderdonk, Wm. H.	Eaton Rapids	Eaton.
Osborn, Hannibal	Tecumseh	Lenawee.
Osborn, F. A.	Eaton Rapids	Eaton.
Owen, J. S.	Douglas	Allegan.
Parker, L. E.	Cadillac	Wexford.
Parker, F. H.	Eaton Rapids	Eaton.
Parker, T. A.	Berwick	<i>Nova Scotia.</i>
Plett, J. H.	Cadillac	Wexford.
Perry, M. M.	Lowell	Kent.
Perry, A. D.	Syracuse	<i>New York.</i>
Plume, P. H.	Grand Rapids	Kent.
Pearsall, S. M.	Grand Rapids	Kent.
Peel, Thomas	Grand Rapids	Kent.
Perkins, S. P.	Adrian	Lenawee.
Phillips, E. C.	Grand Rapids	Kent.
Peffer, T. A.	South Bend	<i>Indiana.</i>
Pearce, Jos. A.	Grand Rapids	Kent.
Parsons, W. S.	Grand Rapids	Kent.
Pomeroy, J. H.	Adrian	Lenawee.
Patengall, O. R.	Plymouth	Wayne.
Pierson, E. J.	Flint	Genesee.
Putnam, D. C.	Douglas	Allegan.
Pope, Arnold	Lenawee Junction	Lenawee.
Palmer, A.	Vernon	Shiawassee.
Patterson, Chas.	Kirksville	<i>Missouri.</i>
Parks, Geo. W.	Lansing	Ingham.
Rose, Wesley	Grand Rapids	Kent.
Rose, T. B.	Wayland	Allegan.
Robinson, J. J.	Lamont	Ottawa.
Robinson, John	Benton Harbor	Berrien.
Robinson, E. C.	Portland	<i>Maine.</i>
Rogers, Albert	Eaton Rapids	Eaton.
Rogers, S. R.	Raisin Centre	Lenawee.
Ross, W. M.	Chatham	<i>Ontario.</i>
Roy, Wm.	Owen Sound	<i>Ontario.</i>
Russell, J.	Wayland	Allegan.
Reid, E. C.	Allegan	Allegan.
Root, J. F.	Plymouth	Wayne.
Rosenkrans, C. T.	Flint	Genesee.
Ryno, E. H.	Wayland	Allegan.
Rockwood, Ed. H.	Flint	Genesee.
Skeels, F. E.	Grand Rapids	Kent.
Smith, S. B.	Amelia	<i>Ohio.</i>
Smith, W. A.	Benton Harbor	Berrien.
Smith, Henry	Grand Rapids	Kent.
Stebbins, C. B.	Lansing	Ingham.
Sessions, Thos.	Wayland	Allegan.
Satterlee, J.	Lansing	Ingham.
Symons, Thos.	Flint	Genesee.
Shaw, H. A.	Eaton Rapids	Eaton.
Sheffield, Chas. W.	Adrian	Lenawee.
Stone, John	Hillsdale	Hillsdale.
Sailor, John	Grand Rapids	Kent.
Stewart, Chas. D.	Owosso	Shiawassee.
Sutton, John	Flint	Genesee.
Schut, P. H.	Wayland	Allegan.

NAME.	P. O. ADDRESS.	COUNTY.
Stearns, Mrs. M. J.	Grand Rapids	Kent.
Speer, Miss E.	Eaton Rapids	Eaton.
Sawyer, E. F.	Cadillac	Wexford.
Sinclair, R. A.	Hillsdale	Hillsdale.
Seaman, Warren	Cadillac	Wexford.
Strong, N. J.	Fairfield	Lenawee.
Steketee, Paul	Grand Rapids	Kent.
Tayer, A. R.	Adrian	Lenawee.
Taylor, N. T.	Eaton Rapids	Eaton.
Taylor, J. F.	Douglas	Allegan.
Thomas, Geo.	Douglas	Allegan.
Thompson, R.	Benton Harbor	Berrien.
Tibbils, L. A.	Cadillac	Wexford.
Trine, Mrs. M. S.	Adrian	Lenawee.
Teed, A. J.	Cadillac	Wexford.
Vanostrand, J. W.	Cadillac	Wexford.
Vosburg, John	Cadillac	Wexford.
VanAsmus, H. D. C.	Grand Rapids	Kent.
VanBrunt, R. H.	St. Joseph	Berrien.
Wallace, Geo.	Cadillac	Wexford.
Wilde, Thomas	Berlin	Ottawa.
Wilde, Charles	Grand Rapids	Kent.
Willson, W. W.	Otter Creek	Eaton.
Wheeler, T. J.	Eaton Rapids	Eaton.
Wagonner, J. E.	Hillsdale	Hillsdale.
West, W. E.	Lansing	Ingham.
Wise, Mrs. Alfred	Lansing	Ingham.
Wardel, J. M.	Cadillac	Wexford.
Woodworth, W. A.	Saugatuck	Allegan.
Wilder, Joseph	Grand Rapids	Kent.
Will, Peter	Cadillac	Wexford.
Wells & Co., A. W.	St. Joseph	Berrien.
Wooden, Miss Rosa	Eaton Rapids	Eaton.
Whitney, C.	Saugatuck	Allegan.
Whaley, James	Cadillac	Wexford.
Whaley, J. M.	Cadillac	Wexford.
Woodman, L. C.	Grand Rapids	Kent.
Watson, Charles	Lansing	Ingham.
Wesson, L.	Flint	Genesee.
Wager, O. D.	Flint	Genesee.
Wickham, Wm., Jr.	Adrian	Lenawee.
White, Wm. E.	Wayland	Allegan.
Willard, S. D.	Geneva	New York.
Wiley, D. W.	Douglas	Allegan.
Zeity, Robert	Cadillac	Wexford.

LIST OF LIFE MEMBERS.

LIFE MEMBERS OF THE STATE HORTICULTURAL SOCIETY.*

NAME.	P. O. ADDRESS.	COUNTY.
Adams, H. Dale	Galesburg	Kalamazoo.
Adams, Mrs. H. Dale	Galesburg	Kalamazoo.
Allis, E. W.	Adrian	Lenawee.
Allis, Miss Mary C.	Adrian	Lenawee.
Archer, Thos.	St. Joseph	Berrien.
Armitage, James	Monroe	Monroe.
Arnold, W. D.	Ionia	Ionia.
Avery, C. P.	Old Mission	Grand Traverse.
Bagley, John J. (deceased)	Detroit	Wayne.
Bailey, L. H.	South Haven	Van Buren.
Bailey, L. H., Jr.	Agricultural College	Ingham.
Baldwin, H. P.	Detroit	Wayne.
Baldwin, J. D.	Ann Arbor	Washtenaw.
Ball, John (deceased)	Grand Rapids	Kent.
Bates, T. T.	Traverse City	Grand Traverse.
Baxter, W. J.	Jonesville	Hillsdale.
Beal, W. J.	Agricultural College	Ingham.
Becker, Albert J.	Saginaw	Saginaw.
Bidwell, H. E.	Plymouth	Wayne.
Blodgett, D. A.	Grand Rapids	Kent.
Brackett, G. B.	Denmark	Iowa.
Bradfield, Edward (deceased)	Ada	Kent.
Bragg, L. G.	Kalamazoo	Kalamazoo.
Bruchner, George W.	Monroe	Monroe.
Bryant, C. T.	South Haven	Van Buren.
Bullock, R. D. (deceased)	Jackson	Jackson.
Burham, W. P.	Ionia	Ionia.
Burrows, George L.	Saginaw City	Saginaw.
Castello, George	Saginaw City	Saginaw.
Chandler, Z. (deceased)	Detroit	Wayne.
Chapman, H. B.	Reading	Hillsdale.
Chapman, Alvin	Bangor	Van Buren.
Chapman, Austin B.	Rockford	Monroe.
Chilson, Nathaniel	Tower City	Dakota.
Chilson, Miss Ida	Tower City	Dakota.
Clark, M. W.	Jackson	Jackson.
Cook, A. J.	Agricultural College	Ingham.
Cook, W. N.	Grand Rapids	Kent.
Cooley, Elisha (deceased)	Jackson	Jackson.
Cooper, George S.	Ionia	Ionia.
Crosby, M. S.	Grand Rapids	Kent.
Crozier, A. A.	Washington	D. C.
Curtis, H. W.	Old Mission	Grand Traverse.
Cushman, E. H.	Fuclid	Ohio
Davis, P. C.	Kalamazoo	Kalamazoo.

* NOTE.—A Life Membership is \$10. The fund thus gathered is invested in good securities and only the interest employed for general purposes.

NAME.	P. O. ADDRESS.	COUNTY.
Day, Benjamin	Ann Arbor	Washtenaw.
Dean, A. J.	Adrian	Lenawee.
DeLisle, Wm. H.	Bay City	Bay.
Dickinson, G. W. (deceased)	Grand Rapids	Kent.
Dieckman, Mrs. Josephine M.	East Saginaw	Saginaw.
Deitrich, C. J.	Chicago	Illinois.
Dixon, A. S.	East Saginaw	Saginaw.
Dorr, S. W.	Manchester	Washtenaw.
Doyle, Thomas	Monroe	Monroe.
Dyckman, A. S.	South Haven	Van Buren.
Dykman, J.	East Saginaw	Saginaw.
Edmiston, D. G.	Adrian	Lenawee.
Ferry, D. M.	Detroit	Wayne.
Ferry, T. W.	Grand Haven	Ottawa.
Fields, Miss Jennie E.	East Saginaw	Saginaw.
Flowerday, Robert	Detroit	Wayne.
Foster, W. D. (deceased)	Grand Rapids	Kent.
Foster, Mrs. Mary E.	Ann Arbor	Washtenaw.
Fowler, S. W.	Manistee	Manistee.
Fuller, S. L.	Grand Rapids	Kent.
Fuller, S. R.	Eaton Rapids	Eaton.
Garfield, Chas. W.	Grand Rapids	Kent.
Geddes, David	Saginaw	Saginaw.
Gibson, Mrs. W. K.	Jackson	Jackson.
Gilbert, John (deceased)	Ovid	Clinton.
Graham, Elwood	Grand Rapids	Kent.
Greening, J. C.	Monroe	Monroe.
Griggs, George W. (deceased)	Grand Rapids	Kent.
Guild, E. F.	East Saginaw	Saginaw.
Hall, Frederick (deceased)	Ionia	Ionia.
Hanford, H. P.	Bristol	Indiana.
Hannah, Perry	Traverse City	Grand Traverse.
Hathaway, B.	Little Prairie Ronde.	Cass.
Haviland, J. B. (deceased)	Traverse City	Grand Traverse.
Hayden, Mrs. H. A.	Jackson	Jackson.
Humphrey, J. W.	South Haven	Van Buren.
Husted, James D.	Vineyard	Georgia.
Husted, Noah P.	Lowell	Kent.
Ilgenfritz, I. E.	Monroe	Monroe.
Ilgenfritz, C. A.	Monroe	Monroe.
Ives, Caleb	Monroe	Monroe.
Jerome, Mrs. David H.	Saginaw City	Saginaw.
Johnson, William	Vassar	Tuscola.
Kedzie, R. C.	Lansing	Ingham.
Kelsey, E. P.	Ionia	Ionia.
Kidd, J. H.	Ionia	Ionia.
Klein, F. J., 156 St. Aubien Ave.	Detroit	Wayne.
Knapp, S. O. (deceased)	Jackson	Jackson.
Knapp, E. U.	Grand Rapids	Kent.
Knisely, A. J.	Benton Harbor	Berrien.
Lawton, George W. (deceased)	Lawton	Van Buren.
Lincoln, L. C.	Greenville	Montcalm.
Lincoln, Mrs. L. C.	Greenville	Montcalm.
Linderman, Harvey	South Haven	Van Buren.
Linderman, A. T.	Whitehall	Muskegon.
Littlejohn, F. J. (deceased)	Allegan	Allegan.
Loomis, P. B.	Jackson	Jackson.
Lyon, T. T.	South Haven	Van Buren.
Mann, S. B.	Adrian	Lenawee.
Marshall, Wm. A.	Old Mission	Grand Traverse.
Mason, L. M.	East Saginaw	Saginaw.
Mason, Mrs. Sarah A.	East Saginaw	Saginaw.

NAME.	P. O. ADDRESS.	COUNTY.
McCallam, E. H.	Lansing	Ingham.
McClatchie, G. C.	Ludington	Mason.
McDiarmid, James D.	Manistee	Manistee.
McNaughton, Robert T.	Jackson	Jackson.
Mitchell, W. H. C.	Traverse City	Grand Traverse.
Moores, J. H.	Lansing	Ingham.
Monroe, Judge (deceased)	Lawrence	Van Buren.
Montague, A. K.	Traverse City	Grand Traverse.
Nabors, Nellie S.	Flint	Genesee.
Nichols, W. W.	Ann Arbor	Washtenaw.
Noble, W. A.	Monroe	Monroe.
Odell, Samuel W.	Muskegon	Muskegon.
Palmer, Thos. W.	Detroit	Wayne.
Parmelee, George (deceased)	Old Mission	Grand Traverse.
Parmelee, Mrs. George (deceased)	Old Mission	Grand Traverse.
Parke, Mrs. Amos S.	East Saginaw	Saginaw.
Parsons, Philo	Detroit	Wayne.
Partridge, B. F.	Bay City	Bay.
Pearsall, S. M.	Grand Rapids	Kent.
Perry, George L.	Lansing	Ingham.
Petty, Thomas	Spring Lake	Ottawa.
Pierce, N. B.	Ludington	Mason.
Potter, E. M.	Kalamazoo	Kalamazoo.
Ramsdell, J. G.	Traverse City	Grand Traverse.
Ramsdell, Mrs. J. G.	Traverse City	Grand Traverse.
Ransom, W. D.	St. Joseph	Berrien.
Renwick, T. R.	Grand Rapids	Kent.
Reynolds, E. H.	Monroe	Monroe.
Reynolds, H. G.	Agricultural College	Ingham.
Rich, Hampton	Ionias	Ionias.
Root, Amos	Jackson	Jackson.
Rose, D. Forsyth	East Saginaw	Saginaw.
Rose, Mrs. Sophie E.	East Saginaw	Saginaw.
Rowe, William	Judsonia	Arkansas.
Rowe, William N.	Grand Rapids	Kent.
Russell, Dr. Geo. B.	Detroit	Wayne.
Rust, C. E.	Ionias	Ionias.
Satterlee, James	Lansing	Ingham.
Savidge, Hunter (deceased)	Spring Lake	Ottawa.
Scott, J. Austin	Ann Arbor	Washtenaw.
Scott, Dr. Austin	Newark	New Jersey.
Scott, E. H.	Ann Arbor	Washtenaw.
Sessions, Charles A.	Mears	Oceana.
Sessions, Alonzo (deceased)	Ionias	Ionias.
Sessions, William	Ionias	Ionias.
Shirts, E. J.	Shelby	Oceana.
Shoop, Rev. D. R.	Hastings	Barry.
Sinclair, W. G.	Spring Lake	Ottawa.
Sigler, Artemus	Adrian	Lenawee.
Slayton, Asa W.	Grattan	Kent.
Sleeper, F. S. (deceased)	Galesburg	Kalamazoo.
Smith, E. T.	Ionias	Ionias.
Smith, N. E.	Ionias	Ionias.
Smith, H. H.	Jackson	Jackson.
Soule, J. B.	Fruitport	Muskegon.
Staunton, G. W.	Grand Rapids	Kent.
Stearns, J. N.	Kalamazoo	Kalamazoo.
Stearns, Ida L.	Kalamazoo	Kalamazoo.
Steere, B. W.	Adrian	Lenawee.
Sterling, F. S.	Monroe	Monroe.
Sterling, J. M.	Monroe	Monroe.
Sterling, J. C.	Monroe	Monroe.
Sterling, W. C.	Monroe	Monroe.

NAME.	P. O. ADDRESS.	COUNTY.
Sterling, W. P.	Monroe	Monroe.
Sterling, Mrs. Emma M.	Monroe	Monroe.
Stockbridge, F. B.	Kalamazoo	Kalamazoo.
Suttle, John (deceased).	Grand Rapids	Kent.
Taylor, George	Kalamazoo	Kalamazoo.
Taylor, George C.	Kalamazoo	Kalamazoo.
Thomas, H. F.	Jackson	Jackson.
Thompson, W. D.	Jackson	Jackson.
Thompson, J. P. (deceased).	Detroit	Wayne.
Towles, George W. (deceased).	Benton Harbor	Berrien.
Tracy, Will W.	Detroit	Wayne.
Vick, James (deceased).	Rochester	New York.
Vick, James, Jr.	Rochester	New York.
Vick, Frank H.	Rochester	New York.
Vick, Charles H.	Rochester	New York.
Vick, E. Colston	Rochester	New York.
Wadsworth, W. R.	Lapeer	Lapeer.
Waite, Gilbert M.	Paw Paw	Van Buren.
Walker, S. S.	St. Johns	Clinton.
Watkins, L. D.	Manchester	Washtenaw.
Webber, Wm. L.	East Saginaw	Saginaw.
Webber, George W.	Ionia	Ionia.
Webber, Miss Frances E.	East Saginaw	Saginaw.
Wells, H. G. (deceased).	Kalamazoo	Kalamazoo.
Whittlesey, John	St. Joseph	Berrien.
Wier, Antoine	Monroe	Monroe.
Wilde, Thomas	Coopersville	Ottawa.
Williams, S. P.	Monroe	Monroe.
Winchester, A. O.	St. Joseph	Berrien.
Wooding, Charles F.	Lowell	Kent.
Woodward, David	Clinton	Lenawee.
Wurtz, Elias H.	East Saginaw	Saginaw.
Zeigler, J. C.	Saginaw City	Saginaw.

INDEX.

INDEX.

A.

	PAGE.
Act to Protect Vineyards.....	186
Acts, concerning Horticulture.....	186
Address by Mayor Cook.....	416
Alex. Hewitt.....	417
President Lyon.....	418
Adrian College Grounds.....	225
Horticultural Society Organized.....	225
Reform School Grounds.....	225
Agricultural Society in Van Buren.....	270
College, The.....	201
Work.....	422
Alcona County, History of.....	368
Horticultural Statistics of.....	368
Aldrich A. L., Statistics by.....	394
Alexander Seedlings.....	470
Alger County.....	404
Allegan County Agricultural Society.....	292
Society.....	549
Horticultural Statistics.....	506
History.....	291
Pomological Society.....	293
Alpena County.....	354
Amendment to Constitution.....	478
American Horticultural Society.....	476
Pomological Society.....	520
Meeting at Chicago.....	54
Society, Organization of.....	21
in Michigan.....	155
Analysis of Fertilizers.....	498
Ann Arbor Grapes and Pears.....	469
Annual Fair.....	495
Meeting, Proceedings of.....	474
Antrim County, History of.....	386
Horticultural Statistics of.....	388
Apple Tree, Oldest in Kent.....	321
Mason County.....	360
Old.....	212
Apples, Best Winter, for Home Use.....	482
Early in Saginaw County.....	336
for Southern Michigan.....	447
First in Ionia.....	314
in Emmet.....	394
Marketing.....	462
in Osceola County.....	357

	PAGE.
Apples, Propagating varieties of.....	420
Seedling.....	470
Shipped from Eaton County.....	288
Unsuited to Southern Michigan.....	419
Arbor Day, first Proclamation concerning.....	61
Notes concerning.....	153
Arenac County.....	356
Armada Agricultural Society.....	277
Ashland.....	430

B.

Bagley John J, on Arbor Day.....	61
Ballot on Apples.....	449
Bailey Prof., Report by.....	471
L. H., Notes by.....	443
M. H., Notes by.....	288
Baraga County.....	408
Barber E. W., Notes from.....	472
on Forest Question.....	453
Barn Yard Manure.....	439
Barry County History.....	290
Horticultural Statistics.....	291
Agricultural Society.....	290
Bartholomew L. D., Exhibit at Fair.....	468
Bay County, History of.....	349
Agricultural Society.....	349
Horticultural Statistics.....	350
Society.....	349
Bee-keeping Supplements Horticulture.....	524
Bees Injuring Maturing Fruit.....	523
Belle Isle Park.....	259
Benzie County, History of.....	381
Horticultural Society.....	383
Agricultural Society.....	382
Fruit List for.....	126
Horticultural Statistics.....	383
Exhibit.....	469
Society.....	538
Benton Harbor Exhibit.....	469
Berrien County History.....	235
Horticultural statistics.....	240-246
Agricultural Society organized.....	241
Bldwell Strawberry, History of.....	71-233
Bitely, N. H., Early Plantings of.....	269
Bird Law.....	191
Bleaching Fruit.....	434
Blight of the Apple.....	515
Blind Asylum Grounds.....	286
Blizzards and deforestation.....	451
Boston Meeting of Pomologists.....	520
Bounty on Forest destruction.....	455
Brackett, G. B., on Michigan Fruit Exhibit.....	178
Bradfield, on Grapes.....	74
Branch County, History of.....	229
Horticultural Statistics.....	230
Branch Societies, reports of.....	525

	PAGE.
Brown, Wm. A., Exhibit of Fruits.....	469
Budd, Prof. Tribute to.....	421
J. L., A Visit with.....	518
Buell's Orchard in Cass County.....	233
Bushel Weights, Legal.....	191

C.

Calhoun County, History of.....	261
Calhoun County Agricultural Society.....	262
Horticultural Statistics.....	263
Campau, Louis, Garden of.....	318
Canadian Horticulture.....	458
Canker Worm in Lenawee County.....	221
Carpet Bedding.....	497
Cass County, History of.....	232
Catalogue of fruits determined upon.....	88
Celery in Van Buren.....	275
at Kalamazoo.....	266
Cemeteries of Wayne County.....	251
Cemetery at Jackson.....	260
near Paw Paw.....	270
at Ann Arbor.....	258
near Lansing.....	286
Census-Returns of Michigan Orchards.....	186
Centennial Exhibitors from Grand Traverse.....	378
Genesee County.....	304
Kalamazoo.....	267
Wayne County.....	254
Jackson.....	261
Allegan.....	298
Van Buren.....	272
Exhibit from Antrim.....	387
Calhoun.....	262
Display from Oceana.....	355
of Michigan fruits.....	61
Preparations.....	51
Central Michigan Agricultural Society.....	20
Cider Mills, French.....	17
Circular concerning State Fair.....	465
City Horticulture.....	443
Change of Name, Action concerning.....	34-60-66-103
Charlevoix County.....	393
Exhibit.....	468
Cheboygan County.....	392
Chestnuts in Ottawa County.....	329
Monroe County.....	216
Children in the Garden.....	485
Chippewa County.....	401
Clare County.....	356
Climatic Changes.....	419
Climate of Southern Michigan.....	419
Indicated by Trees.....	10
of Michigan.....	7
Clinton County History.....	308
Horticultural Statistics.....	312
Clubb, Henry S., on Sand Dunes.....	6
Coldbrook Nursery.....	320

	PAGE.
Cold Storage House at Ann Arbor.....	257
Monroe.....	216
College, The Agricultural.....	201
Farm Selected.....	195
Colon Floral and Art Association.....	232
Commercial Horticulture not Progressive.....	424
Fertilizers.....	435
Orcharding.....	480
Gardening.....	481
Committee Reports.....	463
at Saginaw.....	522
Cone Linus, Sketch of.....	276
Constitution, Amendment of.....	478
Contributions to Horticultural History.....	xi
Cook, Prof. A. J., on Insects.....	416
Mayor, Address by.....	416
Counties Represented at State Fair.....	466
Cranberries in Ottawa County.....	383
Cranberry Culture in Wisconsin.....	515
Crandall, Chas. S., Report as Delegate.....	459
on Grafting.....	429
Crawford County.....	371
M., Letter from.....	426
Note from.....	442
Crop Reports, Monthly.....	102
Curved Walks.....	485
Cyclone Nozzle.....	447

D.

Davis, H. W., Questions by.....	435
December Meeting at Saginaw.....	474
Deforestation.....	451-454
Delta County.....	404
Deterioration of Michigan Apples.....	472
in Orchards.....	418
Detroit, Early Orchards at.....	16
Disbursements for 1887.....	513
Discussion on Bees and Ripe Fruits.....	523
Winter Apples.....	522
Honey Plants.....	523
Vegetables.....	485
Orchard Deterioration.....	422
Marketing Apples.....	463
School Horticulture.....	450
Buying Bees.....	433
Evaporating Fruits.....	435
Forests.....	457
Door Yards.....	444
Downing, Chas., Letter from.....	29
Visit of.....	28
Drake, W. A., on School Horticulture.....	449
Dried Fruit Business.....	433
Drives and Walks.....	445
Drouth and Deforestation.....	454
Dunes of West Michigan.....	6
Dunham, Timothy W., in Kalamazoo.....	265

E.

	PAGE.
Early Orchards in Berrien County.....	235
Ingham County.....	284
Clinton County.....	310
Lapeer County.....	302
St. Clair.....	301
Horticulture in Kent.....	316
Plantations in Oakland.....	279
Plantings in Alcona.....	369
Van Buren.....	368
Plantations in Muskegon.....	316
Indian Plantings in Macomb.....	276
Saginaw Orchards.....	311
Plantings in Barry County.....	390
Eastern Michigan Agricultural and Mechanical Association.....	20
Eaton County History.....	287
Fair Exhibit.....	467
Society.....	537
Horticultural Statistics.....	289
Agricultural Society.....	287
Election of Officers.....	521
Elk Rapids Exhibit.....	469
Emmet County.....	393
Engle, C., Early Plantings of.....	269
Engle's Seedling Grapes.....	470
Peaches.....	470
English Estimate of Michigan Horticulture.....	424
Ethics of Horticulture.....	429
Evaporated Fruit Industry.....	433
Evaporating House at Palmyra.....	235
Evergreens on the Farm.....	500
City Lots.....	445
Exhibit at Jackson.....	466
Expenditures for 1887.....	513
Experimental Horticulture.....	471
Experiment Stations, value of.....	421

F.

Fair, The State.....	465
Fair, First Michigan Horticultural.....	25
Lessons.....	144
Farm Products of Oakland.....	230
Farmer, History of the Michigan.....	198
February Meeting, Account of.....	415
Fencing, Cost of.....	90
Fences, Road.....	407
Ferns.....	498
Fertilization of Flowers by Bees.....	524
Fertilizer Law.....	498
Fertilizers, Commercial.....	435
Field Force Pump.....	446
Figs at South Haven.....	272
Finances, Note Concerning.....	478
Fires of 1871.....	28
First Horticultural Society.....	18
Fitzsimmons, J. F., on Apples.....	447
Floods and Forests.....	453

	PAGE.
Flowers in Village Lots.....	445
Forest Removal and Results.....	425
Protection.....	422
Area in Michigan.....	456
Destruction, Historical.....	453
Forests and Extremes.....	451
Forestry Problem.....	450
Commission.....	476
Question a.....	418
French Cider Mills.....	17
Orchards at Detroit.....	17
Plantings at Monroe.....	208
Planters.....	13
Trees at Detroit.....	247
Pear Trees.....	17
Front Fences Removed.....	497
Fruit Exchange, Michigan.....	244
Fruits Sold in Ingham County.....	285
Fruit Exhibits from Kent County.....	463
Trees, First in Ottawa County.....	328
Fruits—Are they Injured by Bees.....	523
Fulkerson Seedling Grapes.....	312

G

Garfield, Chas. W., on Wisconsin Horticulture.....	461
C. W., Note by.....	1
Garden, the old.....	494
Gardening as an Art.....	485
Gardens, Early at Grand Rapids.....	318
in Japan.....	438
Garver, D. L., Experience of.....	354
Genesee County History.....	303
Horticultural Statistics.....	305-6
Horticultural Society.....	305
County Agricultural Society.....	303
Geology of Michigan.....	3
Gibb, Charles, A Visit with.....	521
Gibson, W. K., Speech by.....	115
Gideon, P. M., Tribute to.....	421
A Visit with.....	516
Gideon's Originations.....	516
Gilbert, John, Brief Sketch of.....	309
Glacial effects in Michigan.....	4
Gladwin County, History of.....	356
Horticultural Statistics of.....	356
Gogebic County.....	411
Grafting, root and top.....	420
Grafting.....	429
Grand Haven Fruit Growers' Association.....	334
River Valley Horticultural Society.....	322
Society.....	543
Traverse County History.....	373
Horticultural Statistics of.....	380
Agricultural Society.....	376
Old Trees at.....	17
Fruits.....	45
Climate.....	10

	PAGE.
Grape, the first in Ionia	314
Vines about Lawton	270
Culture, By Bradfield	74
Grapes in Minnesota	516
Seedlings	470
Gratiot County Horticultural Statistics	343
History of	343
Greene, C. W., Farm of	280
Greenhouses at Jackson	260
Gridley Premium Orchard	287
Grounds About State Capitol	286
Groves, Artificial, in Antrim	388
Gulley, A. G., Exhibit of Fruits	469

H.

Harris, Jno. S., A Visit to	517
Hathaway, Benj.	233
Paper by	418
On Root Grafts	23
Haynes, A. E., Address by	429
Hewitt, Alex., Address by	417
Hon. A., Acting as Chairman	415
Highway Tree-planting	168-425
Hillman, S. D., A Visit with	515
Hillsdale County, Peculiarities of	417
History of	226
Fair	227
Meeting, Proceedings of	415
Horticultural Statistics	227
Hill's Chili Synonyms	265
Hilton, Robert, Sketch of	326
Historical Geology of Michigan	3
History of Bay County	349
Grand Traverse County	373
Antrim County	387
Gladwin County	356
Benzie County	387
Huron County	347
Alcona County	369
Midland County	350
Mecosta County	352
Isabella County	351
Manistee County	535
Newaygo Horticulture	353
Tuscola County	337
Jackson County	259
Gratiot County	342
Kalamazoo County	263
Sanilac County	336
Mason County	359
Ottawa County	327
Muskegon	345
Osceola County	357
Clinton County	308
Ionia County	312
Livingston County	282
Saginaw County	339

	PAGE.
History of Ingham County.....	283
Oceana County.....	353
the Agricultural College.....	201
Michigan Farmer.....	193
Monroe County.....	208
Geneseo County.....	303
St. Clair County.....	300
Shiawassee County.....	306
Michigan Horticulture.....	13
Branch County.....	229
Macomb County.....	275
Wayne County.....	246
Oakland County.....	278
Michigan Horticultural Society.....	24
Washtenaw County.....	254
Kent County.....	316
Cass County.....	232
Berrien County.....	235
Lenawee County.....	217
Lapeer County.....	301
St. Joseph County.....	231
Calhoun County.....	261
Allegan County.....	291
Van Buren County.....	268
Montcalm County.....	314
Barry County.....	290
Hillsdale County.....	226
Eaton County.....	287
Hogg, Thomas, Visit of.....	28
Hollaway, F. M., Note from.....	238
on Forests.....	450
Horticultural progress in Michigan.....	423
Legislation.....	426
Ethics.....	429
Times, quotations from.....	424
Experiment.....	471
Society, the first State.....	18
History of Michigan.....	13
Societies, Law concerning.....	187
Horticulture for Schools.....	440
Village and City.....	443
Statistics of Cass County.....	235
in Western Allegan.....	286
Eastern Allegan.....	283
Upper Peninsular.....	479
Commercial.....	433
in Central Allegan.....	291
Holland Colony Fruit Growers Association.....	333
Pioneers.....	327
Holmes, J. C., Quotation from.....	18
Honey plants for decoration.....	524
Hosford's seedling grapes.....	470
Hoskins, Dr., a visit with.....	520
Houghton County.....	409
House-yards.....	444
Howard Sanford on Leelanaw County.....	389
note from.....	11

	PAGE.
Hubbard, Bela, on Upper Peninsular.....	399
T. S., exhibit of grapes.....	467
Bela, on early orchards.....	16
Huron County, Horticultural Statistics of.....	348
History of.....	347
Shore for Fruit.....	9
Hutchins's Harrison, Peach Orchard of.....	297
Hybridizing Apples and Improvement.....	423

I.

Ilgenfritz Nurseries.....	213
Indiana Horticultural Society.....	459
Indianapolis, Michigan Fruit at.....	57
Indian Apple Trees near Saginaw.....	399
Ingham County, History of.....	283
Agricultural Society.....	285
Farmers' Club.....	285
Horticultural Statistics.....	286
Horticultural Society.....	285
Society.....	545
Injurious Insects.....	446
Insects Injurious.....	446
Introduction to History.....	1
Ionia County Horticultural Statistics.....	315
History.....	312
Agricultural Society.....	313
Horticultural Society.....	315
Iowa State Horticultural Society.....	519
Agricultural Society.....	519
Pomology.....	517
Agricultural College.....	518
Iosco County.....	361
Iron County.....	407
Irrigation of Strawberries.....	264
Isabella County, History of.....	359
Horticultural Statistics of.....	352
Isle Royal County.....	411
Isothermal Lines for Michigan.....	7

J.

Jackson County Horticultural Statistics.....	261
Report from.....	535
History of.....	259
Japanese Gardens.....	428
Jesuit Planters.....	13
Jonesville, Early Horticultural Meeting at.....	

K.

Kalamazoo County History.....	263
Horticultural Statistics.....	267
Agricultural Society.....	263
Kalkaska County.....	372
Kent County Agricultural Society.....	322
Horticultural Statistics.....	326
History.....	316
Keweenaw County.....	407

	PAGE.
Kinds of Apples not suitable to grow.....	419
Kuapp, S. O., Grounds of.....	260
L.	
Lake County.....	358
Exhibit.....	468
Lake Influence.....	9
Lapeer County History.....	201
Exhibit.....	469
Horticultural Statistics.....	303
Horticultural Society.....	302
Agricultural Society.....	302
Law concerning Yellows.....	29, 189
Fertilizers.....	438
Noxious Weeds.....	191
State Reports.....	188
Birds.....	191
Highway planting.....	188
Vineyards, 1862.....	2
Weights and Measures.....	191
Law incorporating State Agricultural Society.....	194
Lawn, Watering a.....	498
surface.....	444
Laws, Michigan Horticulture.....	186
Lawton, C. D., on Upper Peninsula fruits.....	401
Vineyards.....	270
Pomological Society.....	529
Leelanaw County.....	388
Horticultural Statistics.....	391
Legislation for Horticulture.....	426
Lenawee County Exhibit.....	469
Society.....	552
Horticultural Statistics.....	426
Exhibitors at Centennial.....	224
and Hillsdale Horticultural Society organized.....	223
Society.....	532
County, History of.....	217
Lessons, Fair.....	144
Life Members, List of.....	561 564
Lime on Plants.....	426
List of Contributors.....	xi
Apples for South Michigan.....	448
Annual Members.....	555 560
Life Members.....	561 564
Livingston County Agricultural Society.....	282
Horticultural Statistics.....	283
History.....	282
Local Societies.....	426
Action Concerning.....	523
Reports of.....	525
Lombardy Poplar, First in Kent.....	220
London Purple as an Insecticide.....	446
Luce County.....	463
Luther Fruit Exhibit.....	463
Lyon, T. T., on Needs of the North & West.....	518
Note Concerning.....	1
on Michigan Apples.....	472

	PAGE.
Lyon, T. T., Report as Delegate.....	453
Annual Address of.....	477
Paper by.....	423
President, Response by.....	418

M.

Macatawa Park.....	535
Mackinaw County.....	402
Mackinac, Early Trees at.....	17
Macomb County History.....	275
Horticultural Statistics.....	277
Agricultural Society.....	277
Magnesium in Plants.....	436
Manistee County Society.....	530
History of.....	365
Horticultural Statistics of.....	367
Horticultural Society.....	366
Early Plantings in.....	365
Manitou County.....	395
Mann, S. B., Paper by.....	433
Manure, Barn-yard.....	439
Manures, Commercial.....	436
Market Idea in Choosing Apples.....	448
Marketing Fruits, Rules for.....	79
Apples.....	462
Marquette County.....	404
Marvin Strawberry Named.....	93
Mason County, History of.....	359
Agricultural Society.....	360
Horticultural Statistics of.....	360
Fruit Growers' Association.....	360
Mecosta County, History of.....	352
Horticultural Statistics of.....	352
Melons, first in Grand Rapids.....	319
Membership, Notes upon.....	477
Members, List of Annual.....	555-560
Members, List of Life.....	561-564
Menominee County.....	406
Mentor.....	430
Meteorologist of the Society Named.....	35
Methods of Propagating Apples, Poor.....	420
Michigan, Climate of Southern.....	419
Farmer, The.....	198
Horticultural Society Organized.....	24
at the Centennial.....	61
Fruit Exchange.....	244
Exhibit of fruits 1848.....	21
Exhibit at Indianapolis.....	57
at New Orleans 1885.....	149
Fertilizer Law.....	428
Midland County Horticultural Statistics.....	351
History of.....	350
Exhibit.....	468
Minnetonka, Lake.....	515
Minnesota Pomology.....	515
Grapes.....	516
Missaukee County.....	363

	PAGE.
Monroe County, History of.....	208
Exhibitors at Centennial.....	217
Vineyards.....	214
Montcalm County Horticultural Statistics.....	345
History of.....	344
Monthly Crop Reports.....	192
Monticello.....	430
Montmorenci County.....	385
Morris Red Apple.....	224
Mt. Vernon.....	429
Munro Neil, Note concerning.....	388
Exhibit of Fruit.....	469
Muskegon County Society.....	550
Horticultural Society.....	347
Statistics.....	347
History of.....	345

N.

Name of Society, Action on.....	34-60 66-103
Newaygo County Horticultural Statistics.....	353
History of.....	353
New Orleans Exposition.....	149
Nitrogen in Plants.....	437
Nixon Nozzle.....	447
Nomenclature of Fruits, Rules for.....	134
Resolutions concerning.....	114
Northern Michigan Agricultural and Mechanical Association.....	20
Fruits.....	513
Northwest for Fruits.....	513
Note, Introductory.....	1
Noxious Weeds, Law About.....	191
Nurseries at Monroe.....	213
in Ionia County.....	313
Van Buren County.....	270
of Calhoun.....	262
Near Grand Rapids.....	318-321
Early in Washtenaw County.....	255
in Ottawa County.....	329-332
of Wayne County.....	250
in Central Allegan.....	292
Kalamazoo.....	265
Nursery First in Grand River Valley.....	318
Nurserymen's Convention, First Michigan.....	18
Nursery Stock, Purchasing.....	432
in Macomb.....	276
The First in Cass County.....	233
at Snowflake.....	388
Nye Miss. M. A., On School Flowers.....	280

O.

Oakland County Society.....	527
Horticultural Society.....	280
History of.....	278
Horticultural Statistics.....	282
Oceana County, History of.....	353
Exhibit.....	469

	PAGE.
Oceana County, Society.....	547
Pomological Society.....	355
Ocomae, S., Notes by.....	428
Officers, Election of.....	521
Ogemaw County.....	362
Old Mission Orchards.....	374
Onions in Van Buren.....	275
Ontario, A visit to.....	458
Ontonagon County.....	409
Orchard Premiums in Van Buren.....	273
Kalamazoo.....	260
Calhoun.....	262
Profits in Ottawa County.....	332
Committee's work.....	43
Orcharding, Decline in.....	418
Orchards, Early, in Berrien County.....	236
Lenawee County.....	231
St. Joseph County.....	231
Jackson County.....	260
Wayne County.....	247
Branch County.....	229
of Eaton County.....	288
Old, at Monroe.....	210
Organization Michigan Horticultural Society.....	24
of State Agricultural Society.....	193
Ornamental Grounds at the Agricultural College.....	202
Osceola County, History of.....	357
Horticultural Statistics of.....	358
Horticultural Society.....	358
Agricultural Society.....	358
County Society.....	533
Oscoda County.....	371
Ottawa County Horticultural Statistics.....	326, 330, 336
History.....	327
Agricultural Society.....	336
Otsego County.....	386
Owosso Grape.....	308

P.

Package factories in Berrien County.....	246
Page, Abel, Notes by.....	320
Paris Green as an insecticide.....	446
Parmelee, Geo., on Leelanaw County.....	320
first plantation of.....	23
Paper by Benj. Hathaway.....	418
Patten, Prest. C. G., a visit to.....	517
Paw Paw (apple) Synonyms.....	274
early plantings near.....	269
Peach profits.....	270, 293, 299
culture in Berrien County.....	236
orchard, largest in Michigan.....	297
Peaches in Ottawa County.....	329
Kent County.....	324
Ionia County.....	314
at Old Mission.....	375
Pears near Old Mission.....	378

	PAGE.
Pears early at Detroit	17
trees at Monroe	209
Peffer, G. P., a visit with	514
Pennington, Israel	218
Peninsular Farmers' Club Exhibit	377
Phosphorus in plants	437
Pie-plant, first, in Grand Rapids	319
Pierce, L. B., on forest destruction	458
local societies	427
Plantations by French Jesuits	13
Planting city lots	445
Plants, religious notions about	488
superstitions concerning	488
Pomological Society of South Haven	271
Pomology and State Agricultural Society	798
in the Department of Agriculture	167
Pontiac, The Chief	278
Potassium in plants	437
Potato rot, exemption from	20
Powell, E. P., pear orchard of	224
Pray Esek, notes by	287
Premium farms of Hillsdale County	227
farm in Oakland	279
Wayne County	250
farms of Kalamazoo	264
list devised	84
orchard of Grand Traverse	378
in Kent	325
Allegan	269
Berrien County	243
Ionia	313
on Destroying Forests	455
Horticultural	342
on Agricultural College Grounds	284
Orchards in Ottawa	334
Presque Isle County	391
President's Annual Address	477
Prices of Commercial Fertilizers	438
Primate Apple, introduction of	265
Prizes for Essays by Young People	478
Profits in Peaches	270, 293, 299
Orchards	392
Program of State Fair Meetings	471
Annual Meeting	474
Winter Meeting	415
Propagation of Apples, Wrong Methods of	420
Purchasing Trees	432

Q.

Quality in Orchard Products	479
-----------------------------------	-----

R.

Ramsdell, Judge, Fruit Farm of	376
Ransom Chip Process	242
Raymond, Henry, Note from	193
Red Canada in Wayne County	249

	PAGE.
Reform School Grounds.....	286
Reforestation	452
Remedy for Apple Deterioration.....	421
Report of Committees at Saginaw.....	522
on Vegetables.....	483
Reports of Committees.....	463
Law Concerning.....	188
of Branch Societies.....	525
Resolution about School Horticulture.....	449
Resolutions at Saginaw Meeting.....	522
Reynolds, C. P., Letter from.....	368
Reynold's Nurseries	213
Roadside Planting.....	425
Trees.....	188
Roberts, E. C., Note Concerning.....	20
Romeo Farmers' Club.....	277
Root Grafting Condemned.....	420
Roscommon County	362
Russian Apples in Wisconsin.....	514
Iowa.....	519

S.

Saginaw Meeting.....	474
County Horticultural Statistics.....	342
History.....	338
Sand Dunes.....	6
Sanilac County Horticultural Statistics.....	336
History	336
Satterlee, James, paper by.....	486
Saugatuck and Ganges Society.....	539
Schoolcraft County	403
School Grounds, Size of.....	124
Improvement of.....	425
Ground Embellishment in Oakland.....	240
Horticulture.....	449
Scott, E. H. Notes by.....	432
Exhibit of Fruit.....	469
Seal of the Society Adopted.....	121
Secretary, Note by.....	526
Seedlings at State Fair.....	470
Settlers, Early, in Lenawee.....	217
Shiawassee Beauty.....	307
County Statistics.....	303
History of.....	306
Shipments of Berrien County Fruits.....	241
Shirts Strawberry Named.....	93
Shrubs on City Lots.....	445
List of.....	149
Sias, A. W., a visit with.....	517
Size of School Grounds.....	124
Small Fruits in Berrien County.....	239
Snyder, W. L., Address by.....	435
Societies, Local, Action Concerning.....	523
Societies, Local.....	426
Society, History of Michigan Horticultural.....	24
Grand River Valley Horticultural.....	543

	PAGE.
Society Suggestions about the.....	513
Eaton County.....	537
Lenawee County.....	552
Benzie County.....	538
Wayne County.....	546
Washtenaw County.....	541
Ingham County.....	545
Manistee County.....	530
Muskegon County.....	550
Allegan County Pomological.....	549
Wexford County.....	534
Lenawee and Hillsdale.....	532
Oseola County.....	533
South Haven and Casco.....	548
Oakland County.....	527
Oceana County.....	547
Wayland.....	536
Saugatuck and Ganges.....	539
Lawton Pomological.....	529
Society, Grand River Valley.....	543
Soils of Michigan Accounted for.....	5
Southern Michigan Apples.....	447
South Haven, Early Planting near.....	271
and Casco Society.....	548
Pomological Society.....	271
Meeting at.....	35
Spring Lake Statistics.....	330
Horticultural Society.....	332
State Fair 1887.....	465
The First.....	194
Matters.....	481
Horticultural Society, Organization of.....	24
Capitol Grounds.....	286
Agricultural Society.....	20
History of.....	193
Statistics of Branch County Horticulture.....	230
Leelanaw County.....	391
Antrim County.....	382
Midland County.....	351
Manistee County.....	367
Grand Traverse County.....	380
Mason County.....	360
Benzie County.....	383
Alcona County.....	370
Bay County.....	350
Saginaw County.....	342
Calhoun County.....	263
Isabella County.....	352
Montcalm County.....	345
Newaygo County.....	353
Mecosta County.....	352
Collection of.....	481
Huron County.....	348
Gladwin County.....	356
Barry County.....	291
Shiawassee County.....	308
Ionia County.....	315
Ottawa County.....	328-330-336

	PAGE.
Statistics of Kalamazoo County	267
Muskegon County	347
Clinton County	312
Sanilac County	336
Wayne County, Horticultural	254
Kent County	326
Livingston County	283
Osceola County	358
Washtenaw County	258
Jackson County	261
Berrien County, Horticultural	240-246
Van Buren County	275
Cass County, Horticultural	225
Allegan County	300
Hillsdale, Horticultural	229
Macomb County	277
Lenawee, Horticultural	226
Monroe, Horticultural	217
St. Joseph County, Horticultural	232
Eaton County	269
Oakland County	282
Genesee County	205-6
Tuscola County	338
Lapeer County	303
Ingham County	286
Gratiot County	343
St. Clair History	300
St. Joseph Agricultural Society	232
County Horticultural Statistics	232
County, History of	231
Stealing fertility	422
Steere, B. W., Early Planting by	218
Sulphur in Plants	436
Summer Temperature	8
Sycamore Tree in Kalamo	289

T.

Taylor, George of Kalamazoo	266
Temperature in Benzie County	381
Grand Traverse County	379
Western Allegan	298
Affected by Forests	11
for Summer	8
Winter	8
Winter, 1872-3	37
Terraces	444
Thompson, J. P., Tribute to	423
Resolutions concerning	102-107
Thorns	448
Timber affecting Temperature	11
Belts Protecting	422
Top Grafting Commended	420
Topics at Winter Meeting	415
Topics at Annual Meeting	474
Topographical Notes	5
Topography of Hillsdale County	226

	PAGE
Torrey, Geo., Note from.....	263
Tracy, W. W., Report by.....	483
Transplanting Trees.....	499
Trees Indicating Climate.....	10
Religious Notions about.....	488
Superstitious Notions about.....	488
Purchasing.....	432
Transplanting.....	499
by the Roadside.....	188
Tuscola County Horticultural History.....	337
Horticultural Statistics.....	338
Turtle, A. G., Exhibit of Russian Apples.....	468
A Visit with.....	514

U.

Upper Peninsula Horticulture.....	398, 479
-----------------------------------	----------

V.

Van Buren County History.....	268
Horticultural Statistics.....	275
Agricultural Society.....	270
Van Deman, H. E., Letter from.....	476
Varieties of Apples for South Michigan.....	447
that are hardy.....	423
unsuitable.....	419
Unwise selection of.....	480
of Vegetables used.....	485
Vegetables, Report on.....	483
A delight in.....	485
consumed.....	485
Village Horticulture.....	443
Vineyards at Monroe.....	214
Virginia Creeper.....	445

W.

Wagener, Chas., Letter from.....	37
Walker, S. S., Note by.....	309
Walks and Drives.....	445
Wall, retaining.....	444
Washtenaw Horticultural Statistics.....	258
County History.....	254
Society.....	541
Pomological Society.....	258
Watkins, L. D., Farms of.....	256
paper by.....	426
Watering lawns.....	498
Waters' Fruit farm in Ottawa.....	332
Watrous, C. L., a visit with.....	519
Wayland Horticultural Society.....	395, 530
Exhibit.....	469
Village Park.....	294
Wayne County Horticultural Statistics.....	254
History.....	240
Horticultural Society.....	253
Society.....	540

	PAGE.
Weeds in manures.....	440
Weight of a bushel.....	191
Welch, A. S., a chat with.....	518
Wells, H. G., of Kalamazoo.....	287
West Michigan Fruit Growers Society.....	30
Wexford County Horticultural Society.....	384
Wexford County.....	384
Exhibit.....	469
Society.....	534
Wheeler & Smith, quotations from.....	10
Willits, Edwin, on Monroe Horticulture.....	208
Wind-breaks.....	452
Winchell, Prof. A., Note from.....	4, 7, 11
Winds, The Prevailing.....	7
Windsor Strawberry Named.....	93
Winter Temperature.....	8
of 1872-3.....	37
Meeting at Hillsdale.....	415
Apples for Home use.....	482
Wisconsin Apples.....	468
Horticultural Society.....	461
Fruit Experience.....	514
Wooded Areas and Welfare of Country.....	453

Y.

Yankee Springs Orchards.....	290
Yellows, Bidwell's Report on.....	40
Discussion on.....	88
in Berrien County.....	242
Law, Text of.....	189
Near South Haven.....	272
Law.....	23
Young People Should be Interested.....	478

New York Botanical Garden Library



3 5185 00259 0857

